THE ENGINEERING AND MINING JOURNAL AND COAL

Entered at the Post-Office of New York, N. Y., as Second-Class Mail Matter.

VOL. LX. DECEMBER 14. No. 24.

RICHARD P. ROTHWELL, C. E. M. E. Editor.

ROSSITER W. RAYMOND Ph. D. M. E. Special Contributor.

SOPHIA BRAEUNLICH, Business Manager.

THE SCIENTIFIC PUBLISHING CO., Publishers.

SUBSCRIPTIONS to THE ENGINEERING AND MINING JOURNAL are PAYABLE IN ADVANCE. Price: For the United States, Mexico and Canada, $5 per annum; $2.50 for six months; all other countries in the Postal Union, $7.

The address slip on the paper will show date of expiration of subscription. Subscribers wishing their address changed will please give the name of the old post-office as well as the new one.

NOTICE OF DISCONTINUANCE.—The JOURNAL is not discontinued at expiration and is sent to subscribers until an explicit order is received by us, and all payment of arrearages is made, as required by law. The courts invariably hold a subscriber responsible to the publisher for the subscription price of all papers received until the paper is paid for in full up to date and ordered discontinued. PAPERS RETURNED ARE NOT NOTICE OF DISCONTINUANCE.

ADVERTISING RATES furnished on application.

REMITTANCES should always be made by Bank Drafts, Post-Office Orders or Express Money Orders on New York, payable to THE SCIENTIFIC PUBLISHING CO.

THE SCIENTIFIC PUBLISHING COMPANY.

OFFICERS:

R. P. ROTHWELL, Pres. & Gen'l Mang.

SOPHIA BRAEUNLICH, SEC'Y & TREAS.

P. O. BOX 1833.
253 Broadway, New York.
Cable Address: "Rothwell, New York.
Use McNeill's Code.

LONDON OFFICE 20 Bucklersbury Rooms 366 and 367), London. E. C., England. Edward Walker, Manager.

CHICAGO OFFICE: Monadnock Building, Room 737.
DENVER OFFICE: Boston Building, Room 206.

CONTENTS.

	Page.
The Headquarters of the Mining Industry	557
Condition of the Iron Industry	557
Increasing Export Trade	557
The Calcium Carbide Gas Bubble	557
Wurtz's Use of Dilute of Cyanide in 1866	557
The Great Anaconda	558
New Publications	558
Books Received	559
Central Arizona Mining Company.....Willis E. Waterman	559
Amending the Cyanide Patents .....John C. Montgomerie	559
The Chemistry of the Cyanide Process.....J. S. C. Wells	559
Report of the Anaconda Copper Mining Company...Hamilton Smith	559
* Improved Method of Handling Pulp in Silver Mills...L. W. Tatum	560
* The Indicator Veins, Ballarat, Australia.....T. A. Rickard	561
The Iron Mountain Mine.....H. M. Beadle	562
The Gold Regions of Georgia.....William M. Brewer	563
* Stall Roasting	564
* An Electric Pumping Plant	566
The Market for Alabama Iron .....James Bowron	566
Recent Decisions Affecting the Mining Industry	566
Patents Relating to Mining and Metallurgy	566
Personal, Obituary, Societies, Technical Schools, Industrial Notes	567
Notes: Tests of Boiler Plates, 562—The German Coal Trade, 562—Calcium Carbide, 563—Nystagmus, the Eye Disease of Coal Miners, 565—Mining in Guatemala, 566.	

* Illustrated.

MINING NEWS:
Alabama..... 568
Alaska 568
Arizona..... 568
California..... 568
Colorado..... 568
Georgia..... 569
Idaho..... 569
Illinois..... 569
Kentucky..... 569
Michigan 569
Missouri..... 570
Montana..... 570
Nevada 570
New York..... 570
North Carolina. 570
Ohio..... 570
Pennsylvania.. 571
South Dakota.. 571
Utah..... 571
Washington .. 571
West Virginia. 571
Wyoming 571

LATEST MINING NEWS 571

MARKETS:

COAL:
New York... 571
Buffalo ... 572
Chicago..... 572
Pittsburg..... 572

IRON:
New York.... 572
Buffalo..... 573
Chicago..... 573
Cleveland..... 573
Pittsburg.... 573
Philadelphia.. 574

METALS:
Gold & Silver 574
Other Metals. 574

CHEMICALS AND MINERALS.
New York.... 575
Liverpool..... 576

MINING STOCKS:
New York.... 576
Boston..... 576
Cleveland..... 576
Colo. Springs. 576
Salt Lake City 576
San Francisco. 577
London..... 577
Paris..... 577
Meetings 577
Dividends. ... 577
Assessments.. 577
Nov. Divid... 577

STOCK QUOTATIONS.
New York.. 578
Boston..... 578
Ind. and Trust.. 578
Coal Stocks..... 579
Pittsburg..... 578
St. Louis..... 578
Colo. Springs . 578
San Francisco.. 578
Baltimore..... 578
Denver..... 578
Philadelphia ... 579
Salt Lake City 579
Aspen..... 579
Helena..... 579
Duluth..... 579
London..... 579
Paris..... 579
Mexico..... 579
Valparaiso 579
Shanghai..... 579

MINING CO'S.... 580

ADVT. RATES. 18

ADVT. INDEX. 17

THE HEADQUARTERS OF THE MINING INDUSTRY.

Visitors find here files of a great number of papers from the mining districts of this and other countries, and books of reference which can be consulted for information on any question in which they may be interested. They can have their letters addressed in care of "The Engineering and Mining Journal," P. O. Box 1833, New York, and will find in the headquarters every convenience for correspondence.

The review we gave last week of the activity of the iron trade and its largely increased production is very fully illustrated by the scale upon which the Carnegie Company is adding to its plant. This addition is at the Duquesne Works where four new blast furnaces are being erected with a rated capacity of 450 to 500 tons per day each. These furnaces naturally will have the advantage of every improvement up to date, and therefore tend toward a production of pig iron more cheaply than heretofore, thereby rendering the competition of the iron producers of this country a very dangerous factor to those of England and the Continent.

Prosperity in the country at present is not confined to gold mining and the sale of gold mining stocks in Colorado as the large increase in exports of our manufactured goods testify. The returns of the Bureau of Statistics for October brings the total for the month to very nearly the highest mark ever reached, the amount being $18,778,945. To compare the ten months ending with October with the corresponding ten months of 1894 there is an increase in the value of exports of nearly $16,000,000, and if they continue at the present rate the total for the year of our manufactured exports will amount to about $200,000,000, and in excess of any other year.

THE CALCIUM CARBIDE GAS BUBBLE.

There are always many promoters (and at present they are more numerous than usual) lying in wait for the foolish public. There are mining bubbles, more or less like the Merced, each of which will cause greater loss than a hundred little "wildcats" of the Cripple Creek variety, as Boston investors will in due time appreciate. It is well to warn constantly the credulous and avaricious investors against these things, and, in the interest of legitimate mining, to urge upon them to investigate, through reliable and disinterested sources, any investment of the kind, before embarking in it.

Wildcat mines or mining bubbles are not, however, by any means the only worthless or dangerous baits now being offered.

We have frequently referred in these columns to that interesting product, calcium carbide, of which a small quantity was produced in a kind of laboratory, experimental way by the Willson Aluminum Company. a year or so ago. That company is now working on a large scale—not in making calcium carbide, of which it never produced a ton—but in selling rights to manufacture and in collecting cash for such "rights." It is not our intention here to discuss the validity or worthlessness of the patents held by the company, but we are advised that their validity is utterly denied by parties who claim to be ready and willing to go into the manufacture of calcium carbide regardless of them. We desire merely to warn investors of the risks they are running in buying either the "rights" to use these patents or the stock of the Willson Company, which we understand is quoted, and has actually been sold at $1,000 a share, the par value being $100.

The company recently received $300,000 cash, as part payment for the rights it sold to a Chicago subsidiary company, and has paid a dividend of 60 per cent. and expects to pay another of 50 per cent. before long, and yet neither it nor any one else has made a single ton of calcium carbide, and no one knows what the cost per ton would be, or what it will bring, or how many competitors would enter the field if its production afforded any large profit, nor the effect the producing of acetelene by the Fogerty process or some other would have.

It is sufficient to point out that at present the scheme has all the indications of being at least a "bubble," a bubble of explosive gas (acetelene), which is liable to burst at any moment. Investors should therefore act with exceeding care.

WURTZ'S USE OF DILUTE SOLUTIONS OF CYANIDE IN 1866.

When we called attention last week to the early mention by Dr. Henry Wurtz of the use of cyanide of potassium for dissolving gold and silver from its ores and to the curious and convenient forgetfulness by Professor Crookes of this mention, which he had himself published in 1866 in his paper, the "Chemical News," of London, we should have stated a further fact which is very interesting and important to those who are contending against the unwarranted claims of the MacArthur-Forrest patents, even with their astonishing British "amendments" for the use of "dilute solutions" of cyanide.

In the article published in the "American Journal of Science," Vol.

XLI., March, 1886, from which we quoted and which was widely circulated in 1866 in the form of a separate pamphlet, Dr. Wurtz not only mentioned in the use of cyanide for dissolving gold from its ores, but he distinctly refers to "dilute solutions" as possessing certain advantages. This is what he said: "When gold has been obtained in solution, either from ores or from other materials by the action of chlorine aqua-regia, cyanide of potassium or any other solvent, . . . the most rapid and thorough method of saving those metals (gold and silver) will be found by precipitation, . . . more especially when the solutions are dilute."

This statement, made 24 years before the date of the MacArthur-Forrest "invention," clearly covers all that is claimed under their patents even as "amended." It is also a fact that the specification and claims were admitted in this country and England, and far from being an application made, filed and granted, and never after heard of, the matter was fully discussed by Professor B. Silliman and others, and was published, as we have shown, in the "American Journal of Science and Arts" of New Haven, in the "Chemical News" of London, and was widely circulated in a pamphlet printed in New Haven, Conn., in 1866.

THE GREAT ANACONDA.

The publication in another column of the interesting report by Mr. Hamilton Smith to the Exploration Company, Limited, of London, upon the Anaconda property and reduction works will call to the attention of our readers, both from a mining and financial point of view, the importance of the transaction of which we gave the details in our issues of September 28th and October 26th.

The information to be gained from Mr. Hamilton Smith's report, supplemented by the report of Mr. J. D. Hague and two other private reports, which by courtesy we have been privileged to carefully examine, is of vast importance, very instructive, and of the greatest interest to the producers of copper in this or any other country. The facts and figures now in our possession form a perfect illustration of the difficulty in obtaining accurate statistical information of the operation of our most important mining enterprises in this country. As a rule the more valuable they are the more certainly are they held by a private partnership, or if incorporated, by a close corporation operating in the same manner, and it is only in the case of a death of one of these partners or members of the corporation when the legal necessity arises of settling up the estate by a more or less public valuation and sale.

From this it will be seen what difficulties we have had to contend with in all the past years in attempting to give reliable statistics of production and cost, as such enterprises as are referred to above were in no way bound to furnish us with the required information; but owing to their courtesy have invariably given their production figures. At the same time what we might call the individual results were concealed by the terms under which the information was given, viz., simply to be made use of in making up the sum total, with the consequence that the interesting and instructive operation of such a gigantic concern as the Anaconda Mining Company was hidden under a cloud of figures and disappeared in the dim perspective of the whole country's production.

The information now available with regard to this property may be said to bring its history right up to date, as the complete examination by Messrs. J. D. Hague, Hamilton Smith and a staff of accountants employed to examine the books, also by Dr. A. R. Ledoux, who visited the property and works in September and October last, and has placed his information at our disposal, was only concluded last month. The first thing in this report that would attract the attention of any one interested in the subject of copper would be Mr. Hamilton Smith's two claims: first, that the Anaconda can now produce much more copper than any other company in the world, and, second, at a smaller cost per ton. Messrs. Hamilton Smith and Hague are two high authorities, and many investors will accept their dictum on such a subject without question; but it is of importance to examine the matter more closely. The crucial test to be applied is to ascertain some reliable figures of the cost of producing the copper. This, we are glad to say, is gone into in great detail in one of the reports we have critically examined and we are satisfied of its correctness.

There is only one defect in the present arrangement of the Anaconda property, and that will be remedied in the next two or three months, viz., the refining capacity of the works. At present the capacity is only about 50 tons a day of electrolytic copper; but by the increase of the plant now under construction this will be raised to a capacity of 100 to 120 tons a day, and most of the profits on the operation at Anaconda are dependent on refining the whole of their own product.

The ascertained cost for the production of refined copper delivered to the buyers will seem astonishing to many of our readers: but it must be borne in mind that every one of the thousands of tons of ore handled contains from four to six ounces of silver, and some of it a small amount of gold. Taking one month, for instance, of this year and that no exceptional one as to tonnage there were as a daily average, 2,800 tons of ore concentrated, and between 250 and 300 tons of picked ore smelted without concentration, containing in round figures 9,000,000 pounds of copper in that month, and for the first six months of the current year, on a copper production of less than 50,000,000 pounds, there was a net profit of nearly 4 cents a pound. The balance sheet for the first half of the present year we shall publish in our next issue, and it will be seen that the net profit was $1,931,307 and we have closely approximated the product.

There has been much curiosity to know exactly what the Anaconda ore does run, and we are now in a position to state that the average during that half-year was over 6·75 per cent. copper; that the average silver is about 4·5 ounces to the ton of ore, and that the gold collected in the six months amounted to about 12,000 ounces fine.

The past history of the mine is just as interesting as its present condition. The Anaconda proper, with which is worked as one mine the St. Lawrence, has been in operation about 15 years. The workings now extend more than 2,200 feet in length upon the vein, and to a depth of 1,300 feet; the ore is variable in quality, and in the early days before the reduction works were established at Anaconda, about 37,000 tons were shipped to Europe, containing on an average 45 per cent. copper, and 20 ounces of silver to the ton. Throughout the length of these workings, the vein is practically continuous, 10 to 15 feet in width in the narrowest portions, and over 100 feet in the widest, and may be fairly stated to average between 30 and 40 feet. In 1884 treatment of the ore was commenced at Anaconda, and in smelting an enormous tonnage between that date and 1889, the contents of the ore was about 8 per cent. copper; but as this was all sold or sent to refiners in the shape of matte, there was little or no profit from the silver—a very different condition of affairs to the position the company is now in, being now probably the largest silver-producing property in the world. During the past four years, the average grade of copper in the ore has be exactly 7·66 per cent. From the opening of the mine to October 1st, 1895, more than 3,000,000 tons of ore, valued between $50,000,000 and $60,000,000, were extracted from the Anaconda and the other properties belonging to the company. In the Anaconda and St. Lawrence mines, according to the reports of the experts, there are 1,750,000 tons in sight, which would contain, based on the average contents during the first six months of this year, 163,800,000 pounds of copper, and 5,687,500 ounces of silver and about 29,500 ounces gold. The outside properties have produced up to the same date about 2,500,000 tons of ore, and have now in sight at least 1,250,000 tons, and on their average contents for the first six months of this year this would add to the reserve 132,000,000 pounds of copper, 8,825,000 ounces of silver and 46,200 ounces of gold.

This is the first opportunity that has ever been given to thoroughly realize the magnitude of this, the largest copper property in the world. The only mines to compete with it in resources and in present output of copper are the Rio Tinto in Spain, which comes second, and the Calumet & Hecla, Lake Superior, which is third.

We shall shortly, profiting by the information we have now obtained, give to our readers a comparative cost of producing copper by the three largest mines in the world.

NEW PUBLICATIONS.

The Lixiviation of Silver Ores with Hyposulphite Solutions, with Special Reference to the Russell Process. By Carl A. Stetefeldt. Oakland, Cal.

This second edition of Mr. Stetefeldt's well-known treatise is, by a few pages, shorter than the first—a circumstance worthy of comment, because it indicates careful revision and condensation. Most new editions are "revised and enlarged," because it is both easier and cheaper to add fresh material than to excise or amend the old. Mr. Stetefeldt has operated upon his own book with the merciless severity of a critic, and half the pages of the earlier edition have been cut out and replaced with fresh matter. There is a new plate, exhibiting the arrangement of a modern lixiviation plant, and also a plate giving the construction of a drying chamber for sulphides, with hot-air stove. In this construction the cold air enters the top of the stove and moves down through a spiral passage and then through a brick chamber (serving as a store room and equalizer of heat) into the drying chamber. The draft is produced by a Korting ventilator. As I understand the drawing, the brick chamber does not perform the function of a "regenerator," but simply corrects the variations in the air temperature due to the alterations of firing and combustion in the stove.

Mr. Stetefeldt's book is a model of terseness and clearness. As an example of compact statement, Chapter XIX., giving descriptions of practice in several works is worthy of notice. It could easily have been expanded into a hundred pages by the employment of a more diffuse style, and the introduction of innumerable small particulars which the author leaves to be inferred by competent readers. The book is, indeed, not calculated to serve as a complete guide for those who know nothing of chemistry or metallurgy, and who expect, by the purchase of a *vademecum*, to be placed at once in the position of "knowing it all." In the hands of a good instructor it would be an admirable text-book; in the hands of a skilled operator, it would be a suggestive and invaluable adviser. And I take it that these are the functions which it was designed to fulfill.

The Russell lixiviation-process, with which Mr. Stetefeldt has identified himself, has had the fate which attends all modern metallurgical improvements. They are at first doubted, then overrated, and then, after much necessary (and much unnecessary) experimenting, acknowledged to have their proper field, and to be, in that field, no more independent of scientific skill, vigilant fidelity, and commercial economy than the methods

they have superseded. Thus the Russell-process has failed upon unsuitable materials, under unfavorable conditions, and in unskillful hands; and it has succeeded where these factors of failure were absent. The great fall in the price of silver has undoubtedly discouraged its extension. On this ground, the construction of a large plant at Park City, Utah, was suspended in 1893, although the building had been finished, and most of the material and machinery was already on hand. It is evident that the value of an increase in extraction is to be measured by the price of the additional metal obtained; and it is not surprising that the cost of new plants and methods should deter investors, under such circumstances as have surrounded the silver business for several years past. Moreover, the growth of the smelting industry and the increased demand from smelters for siliceous ores, have opened a new outlet to much material that was formerly treated by amalgamation or lixiviation; and the Russell process, together with its two rivals, is crowded into a narrower field. Nevertheless, in that field, it remains, on the one hand, a method capable of excellent results, and, on the other hand, a method absolutely demanding intelligent scientific management. Students of metallurgy cannot afford to ignore it; and practical metallurgists, engaged in operating under this method, cannot afford to be without any light which the experience of others has thrown upon it. Mr. Stetefeldt's contribution to the literature of the subject takes its place, therefore, among the valuable professional treatises which have, in recent years, reflected honor upon American metallurgists.

R. W. R.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

Gold Mill Practices. By Edward B. Preston. Sacramento; California State Mining Bureau. Pages 85; illustrated.

Republic of Mexico. Statistical Report for the Fiscal Year, 1894-1895. City of Mexico; National Printing Office. Pages 33.

Nevada County (California) Mining Review, 1895. Grass Valley, Cal.; "Daily Morning Union." Pages 144; illustrated.

South Australia. Report on Northern Territory Explorations. By H. Y. L. Brown, Government Geologist. Adelaide; Government Printer. Pages 34; with maps and illustrations.

Annales of Engineering. Organ of the Colombian Society of Engineers. Founded May 29th, 1887. Director, Abelardo Ramos, Bogota, Colombia; published for the Society. Volume VII. Pages 48.

American Steam and Hot Water Heating Practice. Being a Selected Reprint of Descriptive Articles, Questions and Answers, from the "Engineering Record" since 1888. New York; "Engineering Record." Pages 317; illustrated.

Chemical Technology, or Chemistry in Its Applications to Art and Manufactures. Volume II., Lighting. Edited by Charles Edward Groves and William Thorp. Philadelphia, Pa.; P. Blakiston, Son & Co. Pages 398; with map and illustrations. Price $4.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.
Letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondent.

Central Arizona Mining Company.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Are you in a position to furnish information regarding the value of stock in the Central Arizona Mining Company, incorporated in this State and papers filed in Albany the 16th day of December, 1878, and on July 4th, 1881, consolidated with some other company under name of Cascade Consolidated Mining Company of Arizona. Since then have had no information about the company. A friend of mine is a stockholder and it is at his request that I write to you.

I remain, yours respectfully,

SYRACUSE, N. Y., Nov. 23, 1895. WILLIS E. WATERMAN.

[Any information furnished by our readers will be appreciated.—ED. E. & M. J.]

Amending the Cyanide Patents.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: In your issue of the 16th inst. I notice you quote the letterpress of the old specification drafted for the late Mr. Alexander Parkes in 1852 from my letter of the 28th ult., titled "The Cyanide Process of Gold Extraction Discovered 43 Years Ago," but in doing so you have prefaced it wrongly. Mr. John Wright took no part in the application of cyanide of potassium to ores as set forth in the specification quoted. In the year 1840 (misprinted in my letter 1848) he and Mr. Alexander Parkes were, however, jointly interested and were the first to apply cyanide of potassium to electro deposition.

With regard to your concluding remarks as to whether the invention had been made public by Mr. Alexander Parkes in such a way as to affect the validity of subsequent patents, I may say that I was intimately acquainted with him and had many a chat regarding experiments he was carrying out in 1886 and 1887 and he spoke to me then about cyanide of potassium being a good solvent of gold and silver in ores; he made no secret of that, as it was an old story to him. His aim at that time was to find some combination that would give quicker results, in fact to have the precious metals dissolved in a few hours instead of days. I am, yours truly,

JOHN C. MONTGOMERIE.

DALMORE, Ayrshire, Nov. 29th, 1895.

The Chemistry of the Cyanide Process.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I have been much interested in Mr. Schneider's articles on the "Chemistry of the Cyanide Process," and while I do not doubt the accuracy of the results obtained by him in the laboratory, I think they give a very erroneous idea as to the decomposition of cyanide when working on a large scale. Such a loss as his tests show would, if they occurred in actual practice, bar the use of cyanide altogether. When in California about a year ago, I had occasion to try the applicability of the cyanide process to certain tailings, and in carrying out these tests made careful determinations of the loss in cyanide. The results obtained may prove of interest to those not already familiar with the process, particularly as they were made on a comparatively large scale, two and one half tons of tailings being taken for each test. The solutions used were not protected in any way from the action of the air, being held in open tanks.

The solution was first run into the ore contained in a vat 8 ft. in diameter, by means of a rubber hose until it stood about an inch above the ore. It was left in this way for about 18 hours, at end of which time it was allowed to run off, and its place taken by new solution. This solution remained on the ore for six hours, when it was drained off and replaced by more fresh solutions, the latter remaining on the ore for six hours longer, when it was filtered off and sufficient wash water used to bring the volume of the several filtrates up to that of the cyanide solutions added. The different solutions as they came from the ore were run through the zinc boxes and from there into the sump, from which they were pumped back into the stock tanks and used over again.

For tests Nos. 1 and 2 I had on hand 4,200 lbs. of 0·3% cyanide (= 12·6 lbs. KCy) and after completing them had 4,300 lbs. of solution of 0·243% (= 10·4 lbs. KCy), showing a loss of only 0·44 lb. of cyanide per ton tailings treated.

For test No 3 began with 4,600 lbs. of 0·34% cyanide (= 15·64 lbs. KCy) and had at end of operation 4,600 lbs. of 0·32% (= 14·7 lbs. KCy), a loss of 0·4 lb. cyanide per ton.

The loss of 0·44 lb. and 0·4 lb. per ton, as shown by these experiments, cannot all by any means be charged to decomposition caused by oxidation of the air or by the decomposing action of carbonic acid. In No. 3, for example, I found that the solution running to waste after obtaining a filtrate equal in amount to the solution added still contained 0·024% of cyanide, and as there was about 1,000 lbs. of this left in the ore, that would account for 0·24 lb. of the 0·4 lb. lost, leaving only 0·16 lb. for decomposing action of ore, air and carbonic acid.

From Mr. Schneider's experiments one would have expected an almost complete decomposition of the cyanide used in such tests as I have described, whereas the loss is really very small, being about 17% of the cyanide used, and representing a value of only 20c. per ton. I am not surprised at L.'s letter in the "Journal" of the 7th, if he derives all of his information in regard to the cyanide process from the articles in question.

I hope the figures I have given will prove to him that the losses of cyanide caused by air and carbonic acid are in reality very small. I have yet to learn of any case in which the cost of chemicals for chlorination is less than I have given as the value of cyanide consumed per ton ore.

COLUMBIA COLLEGE, New York, Dec. 11. J. S. C. WELLS.

REPORT ON THE ANACONDA COPPER MINING COMPANY.

By Hamilton Smith.

This report has just been made to the Exploration Company, Limited, of London, and is dated November, 1895.

"The following general description of the properties of the Anaconda Copper Mining Company will be of interest to our friends who have lately purchased, in conjunction with ourselves, a large number of shares of that company.

The property was examined by Mr. James D. Hague in 1889, by Mr. Henry C. Perkins in 1890, and by Mr. Hague and myself in September and October of the present year; the Anaconda accounts have also been examined from time to time by accountants selected by us; we have, therefore, quite full information, both past and present.

Copper and Silver Mines.—The mining properties are of great extent and are situate in the State of Montana, most of them being in or near the City of Butte; the most important thus far worked have been the Anaconda, comprising three mines, and the Syndicate Group, comprising five mines. These mines have been developed to a depth of 1,200 ft., and since 1880, when work was first commenced, have produced ore yielding very nearly 400,000 tons of fine copper, together with a large amount of silver and some gold. Until the late development of electrolytic refining, but little profit accrued from the precious metals.

The reserves of ore fairly in sight in these two groups of mines are very conservatively estimated by Mr. Hague to be 3,000,000 tons; the manager of the company estimates a much larger quantity. What is of far more consequence, however, than the question of reserves is the continuance of good ore with increasing depths; my general conclusions are quite hopeful in regard to this; at the depth of 1,150 ft. in one of the mines an entirely new ore body has this year been discovered, carrying ore of high grade, and the deposit promises to be of large extent; this discovery I consider to be a most important indication, and impresses me with the belief that while some of the existing ore bodies may give out with deeper working, other ore bodies will be found to replace them. The extent of mining ground, known to be productive, owned by the company, is so great, that this fact indicates a long life to the property, even with working conducted upon the present gigantic scale. The mines can easily supply ore which will yield 5,000 tons of fine copper per month.

Reduction Works.—These are situate at the town of Anaconda, about 20 miles from Butte, the ore being hauled over a railway controlled by the company. There are two sets of works, an important safeguard in case of fire. Their united capacity for producing pig copper is easily 5,000 tons per month. An electrolytic refinery is now producing 1,500 tons of refined copper per month, and I hear from the trade that its quality is not excelled, being first class for conductivity. Another refinery of equal capacity is now being erected, which will be completed this year, so that by 1896 the company can produce 3,000 tons of electrolytic copper per month at its own works.

Subsidiary Interests.—The company owns a large timber estate with saw mills attached, a coal mine with a coke plant, an extensive foundry

and machine shop, an electric tramway and light company, a water supply company, a fine hotel at Anaconda, town properties in Anaconda, and brick works. It also owns 51% of the capital stock of the Butte, Anaconda and Pacific Railway Company, now a prosperous enterprise. The company, therefore, produces most of its supplies, and could hardly be in a more independent position.

Cost of Construction.—Our accountants estimate that there has been expended upon the property about $15,500,000 for construction and costs of subsidiary interest, which will give one some idea of the magnitude of the Anaconda. Take it for all and all, it can be considered the most extensive mining property in the world.

Financial Condition.—The company took over the property on July 1st, 1895, assuming obligations amounting to about $750.000, which were less than the value of the copper on hand in process of manufacture. It started with no working capital, the idea being that by the end of 1895 the profits for the six months would be sufficient to pay off this debt, to complete all construction work, such as the new refinery, and thus to commence the year 1896 with a fair amount of working capital in hand.

Costs of Copper and Profits.—It might be injudicious to state the exact cost of producing copper, but I feel satisfied that it is less than that at any other of the large copper companies. This is due to the recovery at reasonable expense of the silver and gold contained in the pig copper by electrolytic refining. For the year 1895 the Anaconda silver product will probably be over 5,500,000 oz. fine, and over 22,000 oz. of fine gold. I think the Anaconda produces more silver than any other company in the world except the Broken Hills Proprietary.

The profits to be expected depend so much upon the demand for copper and its price, that estimates must be largely conjectural. Supposing the company can market* 50,000 tons per annum, even with a low range of prices, annual dividends of $3,000,000 can be reasonably expected; with the price of copper maintained at the rates which have ruled for the past five months, the profits would be far in excess of this sum. For the year 1896, no matter if the net earnings are much more, it is the present intention of the management to only divide $3,000,000, payable quarterly, and thus accumulate a considerable cash reserve. As there are 1,200,000 shares, this would be $2.50 per share. Personally, I feel rather optimistic as to the demand for copper during the next two or three years: great quantities will be needed, I think, for the development of electric traction, and the civilized world will, I also think, have a period of great prosperity, which means an increased demand for copper.

The attractive features of the Anaconda are that it can now produce much more copper than any other company, and at a smaller cost per ton."

IMPROVED METHOD OF HANDLING PULP IN SILVER MILLS.

Written for the Engineering and Mining Journal by L. W. Tatum.

In November, 1894, I was engaged as consulting engineer to visit the Sheridan Mill, situated in the Mogollon Mountains, New Mexico, with the especial object of devising some method of increasing the output of the mill and save the large daily slime loss.

I found the conditions as follows: 15 stamps, 1,100 lbs. each, running 85 drops per minute and crushing through 40 mesh steel wire screens about 25 tons per day (24 hours). Batteries were fed by one Tullock and two challenge feeders receiving their ore from bins placed below the rock breaker.

The sand product from batteries was run through 6 pans and 3 settlers, 6 hours being given for chemical treatment and amalgamation in the pans, their capacity being 1 ton each. The slimes from sand tanks were allowed to run to waste sluice and were entirely lost. This loss was found by numerous tests to amount to 5 tons per day, being 20% of entire ore crushed.

The ore was a quartz, very friable, having seams filled with talcose clay which could not be separated from the rock, and this, together with the too heavy stamps and fine crushing, was the main cause of so great a slime loss.

To increase the daily output without enlarging the mill, and prevent all slime loss while keeping the mill in constant operation, was the problem presented.

Numerous assays were made of battery pulp, taking the siftings from 60, 80 and 100 mesh screens, which showed the coarse sand to contain by assay only about 20% of the value of the ore. With this question settled, 35-mesh screen was tried and same tests applied—then 30-mesh, 25-mesh and finally 22-mesh screen was adopted as being the best, all things considered. This increased the battery capacity to 40 tons per day.

The slime loss, however, was still some 4 tons per day, or 10% of ore crushed, as against 20% loss with 40-mesh screens. The pans were 1 ton capacity each and running on 6 hour charges; this gave us 24 tons as daily pan capacity. Tests were now made with a view of shortening the time for chemical treatment and amalgamation. This was done by running two pans and one settler on 5½ hour pan charges—while the remaining pans were run on usual 6 hour charges.

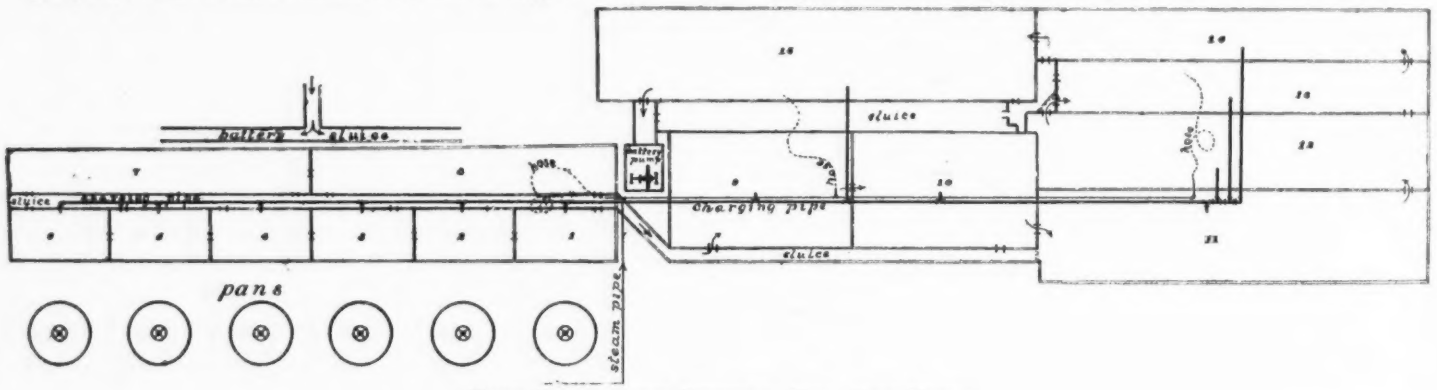
Finding no increase in value of tailings, 5-hour, 4½-hour, and finally 4-hour charges were tried and found to give equally good results with 6-hour charges. This brought our pan capacity up to 36 tons per day and about equaled our battery capacity, making allowance for stoppages for repairs, replacing screens, etc. To now overcome the slime loss of 4 tons per day was the next question claiming attention.

Large tanks were built outside of mill on a level with the sand tanks in mill. These tanks were made of 3-in plank and were 4 ft. deep. They were provided with connecting sluice ways, as shown in accompanying cut, so arranged that any one tank could be cut out and pulp allowed to flow through all the others back to the battery pump. It was very soon found that the pulp was thick enough to carry the sand with it, and in a few days we had all the tanks so full of pulp (sand and slimes) that it would not flow, and yet was not thick enough to shovel, being about the right consistency for charging the pans.

The battery was hung up and hand pumps were hastily constructed of inch lumber, and the contents of tanks were pumped onto charging floor. As soon as possible a Vanduzen No. 1 steam jet pump, having a capacity of 10,000 gallons per hour, was procured. This pump weighs about 25 lbs. only, and is easily lifted from one tank to another as required. It is provided with ¾ in. steam connection and has a 4 in. discharge. Having no valves or other movable parts subject to wear, it is well adapted for handling pulp. It requires no priming and will pump out tanks that are thick enough to shovel. A test was made of the thickest pulp we have had occasion to handle and it was found to contain 60% of solid matter. As this was pumped with perfect ease, it is evident much thicker pulp can be handled, but, as above is thicker than our usual charges, it has not yet been tried.

On arrival of pump a 4-in. discharge pipe and a 1¼-in. steam pipe were placed in position as shown in cut. The discharge pipe was given a grade of 1 in. to the foot to insure the pulp settling back to tanks when steam was cut off. The Ts opposite each pan were provided with wood plugs and launder's lead from each to pans opposite. The launders are removed when not in use.

The pump is connected with discharge pipe by a 4-in. hose about 2 ft.



Tank Plan of the Sheridan Mill, New Mexico.

in length provided with fire hose couplings. This makes a joint flexible and easily and quickly connected. The steam connection is made with 1¼-in. steam hose of sufficient length to require but three connections to reach entire system of tanks.

The pump is allowed to set on bottom of tanks, and will pump entire contents if it will pass the strainer which is provided with ¾ in. square holes. By this method we carry the sand through the entire system of tanks, and the pump does the work of two men.

One man can now charge three pans in 9 minutes, where it formerly required two men 30 minutes (the mill not being well arranged for quick or economical work).

The full expense connected with the operation of this system is practically nothing. The pulp is heated to about 110° Fahr. by passing through the pump, and this enables us to bring our pans to the boiling point in 15 minutes, as against 30 to 45 minutes by old method (live steam being used).

The advantages are briefly these:

1st. It affords a quick and economical method of handling the sand and slimes, and prevents all slime loss.

2d. The heating of the pulp in part by the pump saves time consumed in steaming pans.

3d. It gives 30 minutes to 45 minutes more for amalgamation, an item of considerable importance when running on 4-hour charges.

The practical results obtained are best shown in following table (no additional pans or stamps having been added):

	November, 1894.	November, 1895.
Daily tons crushed	25	40
Slime loss per day, tons	5	0
Percentage of values saved	54	82·6
Consumption of fuel, cords wood	6½	5½
Milling expenses per ton, including fuel, chemicals, labor, repairs and superintendence	$7.15	$4.59*

Many modifications of this system will suggest themselves to the profession—modifications rendered necessary by a difference in character of ore and amount of slime loss and space available for settling tanks.

The very successful working of this system, the first of its kind in the United States so far as I know, has induced me to publish the results, hoping that it may help solve a like perplexing problem for some one else.

*Note.—Tons of 2,000 lbs. are given in the foregoing.]

* Property is 90 miles from railroad, which accounts for so high a cost per ton

THE INDICATOR VEINS, BALLARAT, AUSTRALIA.

Written for the Engineering and Mining Journal by T. A. Rickard.

Ballarat, whose alluvial deposits won for it a famous name in the annals of gold mining, whose "Welcome Stranger" * leads the list of nuggets that from time to time have wetted the world-wide hunger after gold, whose handsome streets in their adornment of well chosen statuary now render it the most beautiful of the mining towns born during the excitement of the golden era of half a century ago; this Australian city, christened with an aboriginal name, has also a permanent industry of lode mining in the development of which there are certain features as interesting as they are unique. I refer to the "indicator" veins which will form the subject of this brief communication.

The bedrock of the alluvium discovered in 1851 is the country of the vein mining of to-day. It consists of an enormous thickness of slates and sandstones whose graptolites and other fossil remains determine their lower Silurian age. The lode formation exhibits various modifications of fissure veins of a kind familiar to the miner of other gold-producing regions, but in addition there are to be seen in the mines of Ballarat East certain features which have long been recognized as exceptional.

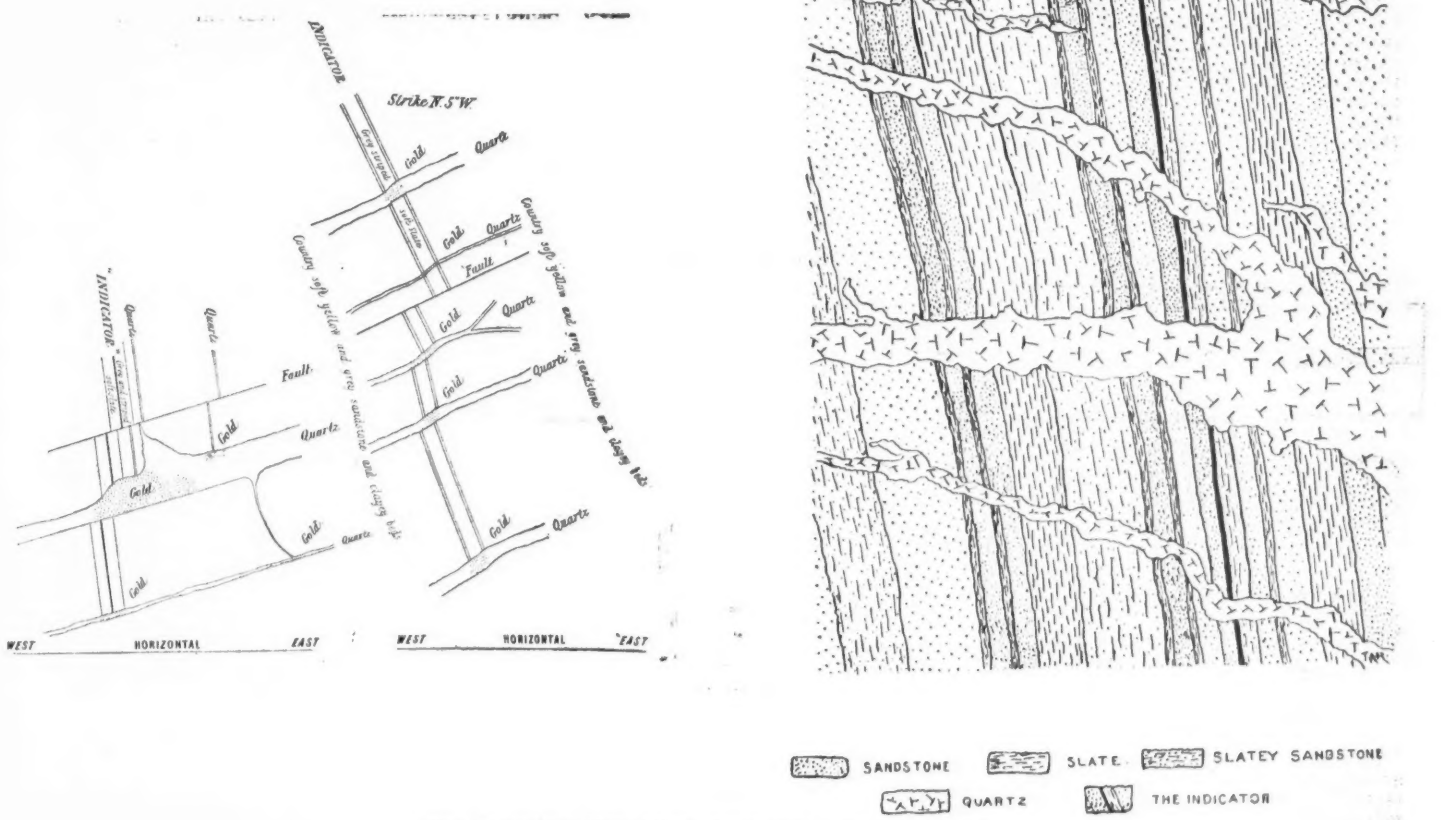
This part of the district was distinguished for the particular richness of its old river channels or alluvial leads. It was many years before sufficient work had been done to suggest that the line of maximum richness was coincident with the occurrence, in the bedrock underneath, of certain quartz veins of peculiar character. In 1871 Mr. Morgan Llewellyn pointed out this feature. In December, 1888, Mr. E. J. Dunn described† a similar occurrence in the neighboring district of Wedderburn. In September, 1893, the writer himself contributed a note‡ on the subject, and still more recently Mr. William Bradford read a short paper§ before the Australasian Institute of Mining Engineers.

In the accompanying drawing the Indicator is represented as seen by me in the breast of the 700 ft. level of the New Normanby mine on February 25th, 1891. The black line is the Indicator. It was so named because along its apex the bedrock of the gravel channels was found unusually rich and because also it was afterward determined that its strike indicated the trend of the most productive ore chutes discovered by the vein mining or reefing which succeeded the exhaustion of the alluvium. The latter gave the best yield when the bedrock of the gutter or channel was traversed by irregular quartz seams and more especially along a certain line which in due time became recognized. When shafts were sunk into the bedrock the quartz veins, irregular as they were in their distribution, were found to carry coarse gold in notable quantity whenever crossed by a certain black line. This black line—the Indicator—conformed to the bedding of the country and lay within a certain series of thinly bedded slates and sandstones. Mr. Bradford calls it "a pyritic sheet (varying in width from ⅛ in. to about 1 in., which has been formed in an almost parallel line with the line of the strata." Mr. Dunn describes it at Wedderburn as being a "bed of rock of dark gray to black color, and from 5 to 7 in. wide, made up of thinly laminated unctuous clay." On the Tambourine reef, also at Wedderburn, very rich patches of gold ore were found in March of the present year, and it was determined that they occurred along the line of the Indicator, which is here described‖ as being a vein of "a yellowish substance, between 2 and 3 in. wide, streaked with reddish brown."

The apparent divergence of description is to be explained by the fact that the Indicator is essentially a thin bed of dark slate of varying width which in some parts of the region has undergone crushing and then becomes a clay, and in others is so mineralized as to be distinguished as a small seam of iron pyrite. At the end of the 700-ft. level in the New Normanby mine it was slightly over $\frac{1}{16}$ in. thick, and carried pyrite imbedded in a crushed black slate. In a cross-cut near by it became a small vein of quartz, an infrequent modification in its composition. In the adjoining mine—the Prince Regent—it was ¼ in. thick and carried both pyrite and black clay. When black clay is replaced by quartz the occurrence of rich ore is found by experience to be unlikely. The characteristic of the gold occurrence lies in the fact that the cross-veins or spurs of quartz which traverse the nearly vertical Silurian beds at a strong angle are valuable for their gold contents only in the close vicinity of the Indicator.

The band of country enclosing the Indicator is ribboned, that is to say, it consists of closely alternating thin beds of slate and sandstone of varying shades of gray. These, with the Indicator, which is one of them, are crossed and slightly dislocated by the quartz veins. The latter are irregular in their behavior and consist of simple white quartz (with only an insignificant percentage of iron pyrite) which is notably gold-bearing on either side of the Indicator for a distance which differs at different places but is usually comprised within the width of an ordinary drift.

As seen in the New Normanby, the crossveins slightly dislocate the Indicator. Mr. Bradford says that the Indicator slates aggregate about 6 ft. in width, and "on either side of this band there is a smooth wall. On one part of the line there is a vertical displacement of about 3 ft. on the western wall side. It displaces the stone." This appears out of accord with the evidence afforded in the New Normanby, where it is the Indicator that is dislocated by the quartz spurs, and not vice versa. Mr. Dunn, a very careful observer, contributes drawings which agree with the one made by me. It is true they are diagrammatic, because they do not reproduce Mr. Dunn's own sketches, but are copies or translations prepared by some draughtsman in the Victorian mining department. This explains why, in the Olive Branch drawing, the topmost quartz seam cuts through the Indicator without changing its perfectly regular course, while the



THE INDICATOR VEIN, NEW NORMANBY MINE, BALLARAT.

* This nugget weighed 2,280 oz. when found, and yielded, on melting, 2,248 oz. of pure gold.

† "Report on the Country in the Neighborhood of Wedderburn and Rheola." Quarterly Report of the Mining Department of Victoria.

‡ "Certain Dissimilar Occurrences of Goldbearing Quartz." Proceedings of the Colorado Scientific Society. 1393.

§ "The Indicator Feature in Some Gold Occurrences."

‖ As per the Bendigo "Advertiser" of March 29, 1895.

other similar quartz seams all, without exception, break and displace it. The representation of the behavior of the topmost seam cannot, therefore, be taken too literally. The other drawing confirms this view.

The Indicator is essentialy a bedded vein of pyrite in black slate. It conforms to the bedding of the country and when the latter is either distorted or faulted by crossveins it is also dislocated by them. The discussion of the causes which have rendered its intersection so favorable to the finding of rich golden quartz would suggest many points of enquiry. We may conceive this seam of black slate as a layer of fine silt or mud, full of minute remnants of vegetable life, laid down upon the floor of the Silurian sea, subsequently covered by alternating laters of sand and silt which in the patient hands of Time became the sandstone and slate of to-day. The vegetable matter became carbonized and, as in the ordinary precipitation of gold in the chlorination process, became the agent compelling the subsequent deposition of gold from circulating solutions.

The association of graphitic slates and shales with gold ore of notable richness is a matter which has come under the observation of many. I would mention the black Silurian slates of the Bendigo mines (Victoria, Australia); the Devonian slates of Gympie (Queensland, Australia); the similar rock, but of Jurassic age, in the California Mother Lode series of mines (especially in Calaveras and Amador counties); the black shale associated with the celebrated pockets of specimen ore found at Farncomb Hill, Breckenridge (Summit County, Colorado); and the black lime shale of the silver-gold deposits of Rico (Dolores County, Colorado). Each of these represent occurrences of ore bodies of a richness rendering them remarkable in their own particular region. They present a coincidence of evidence which while it may be possible of explanation in some other way than that above suggested must yet, in default of such, stand as a very remarkable testimony upon the great subject of the origin of gold ores in veins.

A GLOSSARY OF STAMP-MILLING TERMS.

In the following explanation of the terms which have been used in these articles the first word will be American and the second the English or Australian equivalent. The American terms are often used outside of the United States.

Stem or Shank.—The vertical rod or shaft of wrought iron which carries the stamp at its lower end. It is the handle of the hammer.

Boss or Top-head.—A heavy cylindrical piece of iron (usually cast or steel) into the top of which the stem fits and into the bottom of which the shoe is inserted. It is the body of the hammer into which the handle fits and which also gives heft to the blow.

Shoe or Head.—The wearing part of the stamp which comes in contact with the ore and does the actual crushing. The hammerhead.

Die or False Bottom.—The iron, a flat hexagonal or cylindrical piece, upon which the ore is crushed. It is the anvil. At Clunes, in Victoria, it is called the "stamper bed."

Cam or Wiper.—The curved lever which lifts the stamp and is therefore sometimes called the "lifter."

Tappet or Disc.—The collar under which the cam is inserted so as to lift the stamp.

Mortar or Coffer.—The box, sometimes wood but lined with iron, usually solid cast iron, inside which the operation of crushing takes place. It is the mortar of which the stamp is the pestle. Also called "stamper box."

Screen or Grating.—The perforated metallic plate or wire cloth through whose openings the crushed ore is discharged, and which is intended to prevent its exit until crushed to a degree of fineness supposed to be regulated by the number and size of the openings in the screen.

Ties and Tyes.—The latter to be preferred. A Cornish term for the sluice boxes used for the extraction of the heavy sands in mill tailings.

Tailings.—The waste from the mill, the pulp after the gold has been extracted by mill treatment. In Gilpin County, Colorado, it is applied, erroneously, to the concentrates saved on shaking tables.

Chuck-Block and Chock-Block.—The first to be preferred. The wooden block or board which is attached to the bottom of the screen so as to raise the depth of the issue and act as a false lip to the mortar.

Discharge or Issue.—The expulsion of the pulp from the mortar. It is also used to designate the distance from the bottom of the screen to the top of the die, because this figure determines, more than any other factor, the rapidity of the expulsion of the pulp.

Battery.—Any single mortar with its stamps (usually five) complete. The words "stamper" and "head" are also employed in the colonies in place of "stamp."

Mill or Machine.—The latter is largely confined to Queensland, although "crushing machine" and "battery" are used synonymously with "mill" in other parts of Australia to designate the reduction plant as a whole.

Traps or Wells.—The troughs and catch-pits, whether carrying mercury or not, which are used to arrest escaping amalgam, etc. The word "trap" should be confined to the deep boxes unprovided with mercury and the word "well" to the transverse troughs which do contain it. At Clunes the word "boxes" is used, while elsewhere in Australia "ripples" is a term given to shallow wells as distinguished from the deep ones.

Pan or Dish.—A copper or galvanized iron utensil used for washing gold ore and gravel so as to separate the heavy gold by a shaking motion. It corresponds to the Cornishman's vanning shovel.

The Australian uses the word "crushing" where the American says "mill run" to designate the treatment of a given quantity of ore. The Colonial employs "mullock tip" and "spoil heap" as synonymous with the American "dump" to describe the accumulation of waste rock coming out of the mine.

The American prefers "quicksilver" where the Australian uses "mercury." In the Colonies a "flask" of mercury contains 75 lbs. avoirdupois and in the United States a "bottle" or "tank" of quicksilver contains 76½ lbs. The Colonial calls the ore sent to the mill "stone," the Englishman "millstuff" and the Colorado-Cornishman "mill dirt."

The growth of travel and the rapidity of modern methods of communication tend to bring about a uniformity in technical terms which is convenient and desirable.

THE IRON MOUNTAIN MINE.

Written for the Engineering and Mining Journal by H. M. Beadle

Sir: This mine is situated in Missoula County, Montana, on the eastern slope of the Bitter Root Mountains, near the Cœur d'Alene branch of the Northern Pacific Railroad. The claim includes a body of serpentine, of irregular shape on the surface, about 400 ft. long by 200 ft. wide. This serpentine is entirely surrounded by granite.

There is one vein showing in the serpentine, or along the south contact of the granite and serpentine, which has all the characteristics of a true vein, having gouge on the walls and slickensides. The width of the vein, which is called the "Forbes," is irregular, sometimes narrowing down to two feet and at other places widening to 8 or 10 ft. This vein has been worked for about 350 ft. in length. Its strike is north of west and south of east, and its dip about 70° to the south.

North of the Forbes there is a body of ore of irregular form called the "Wallace." It is permanent in depth, so far as explored, but does not ex end in length or width. The ore in it is very rich, and wherever it has been struck it improves in depth. There is not a great deal of difference between the ore and the wall rock; there is no gouge or seam or any mark to determine the boundary between the pay and the country rock, and in mining the rock is broken as far as the pay goes.

North of the Wallace is the "McDonald," which is almost a duplicate of the Wallace, except the ore is not quite so rich. It is permanent in depth, and otherwise has all the characteristics of the Wallace. It is believed that there are other bodies of ore in the serpentine similar to the Wallace and McDonald, and some of the stockholders have been trying for years to induce the management to procure a diamond drill and explore it. Since the discovery of the Wallace and McDonald ore bodies, no explorations have been made except in depth, and these have been found at a depth of 1,400 feet at the same relative positions as on and near the surface. There is every evidence that they are exceptionally permanent.

The lateral pressure in the mine must be very great, for all the upper stopes have been completely closed. Though the wall rock is soft, there has never been a cave in the mine, and the miners regard it as safe from falling rocks, no one having been hurt by them since the mine was opened.

The company has a concentrator a mile away from the mine. This was built to concentrate 50 tons in 24 hours, but so soft and easily concentrated is the ore that 200 tons are being worked in that time. The concentration is seven to eight tons into one. The ore is crushed in rolls and concentrated by jigs and Evan's tables, and the slums are carried to settling tanks, where the clear water is drawn off. A large per cent. of the metals is saved.

The ore now is being lifted to the 800 level. It is hauled to the entrance of the tunnel by mules and dumped into bins. It is then emptied into cars drawn by a small locomotive to a point above the mill, where it is emptied into other bins. From thence it is sent by a gravity tramway 2,000 ft. to the mill. In the spring an adit will be driven from the 1,400 level so the ore can be taken directly on one track to the mill.

The property is now being managed very conservatively, no expenses being made beyond what are absolutely necessary to the successful working of the mine. The ore sales for October amounted to $26,205.43. The current expenses were $20,268.13, and the net profit $6,034.38. A dividend of $5,000 was declared for November, but the returns from ore sales have not yet been made public. It is now known that the last dividend, which was reduced one-half, out of excess of caution, might have been the usual monthly one without any injury to the successful working of the property, which is looking better in the lower levels than ever before, the ore yielding larger returns. The concentrates have been yielding from 90 to 105 oz. of silver and from 45 to 50% lead. There are less refractory elements in the ore than ever before, and it is richer in silver. The cost of breaking and lifting the ore has not been increased. If a diamond drill is used the probability of finding other good bodies of ore is very great. That the mine will prove a dividend-payer for many years is most probable.

Tests of Boiler Plates.—Some interesting results were recently obtained by the Paxton Rolling Mills of Harrisburg, Pa., on tests of boiler plates for 20 Russian locomotives now building at the Baldwin Locomotive Works. The steel had to show a tensile strength of 35 to 42 kg. per square millimeter (about 50,000 to 60,000 lbs. per square inch), and an elongation in 8 in. of 25%, both longitudinal and transverse. With the exception of 20 plates ⅝ × 87 in. wide, the material varied from ½ to ⅝-in. thick by 74 in. wide and under. Of the 104 plates rolled, three failed in tensile and one on gauge. In elongation the remaining 100 plates averaged 27·46% in the longitudinal direction and 27·90% in the transverse—the latter a result not generally looked for. All the steel slabs were furnished by the Pennsylvania Steel Company, made in their open-hearth basic furnaces, and showed an average analysis as follows: Carbon, 0·165; phosphorus, 0·014; manganese, 0·37, and sulphur, 0·27.

The German Coal Trade.—The imports of coal into Germany for the nine months ending September 30th are reported by the "Deutsche Kohlen-Zeitung" at 3,630,623 metric tons; an increase of 1,995,325 tons over the corresponding period last year. The largest item this year was 2,797,676 tons from Great Britain. Imports of coke for the nine months were 330,333 tons, of which 286,044 tons came from Belgium; the total shows an increase of 30,128 tons over last year. Imports of lignite or brown coal were 5,160,067 tons, all of which came from Austria-Hungary. There was an increase here also, amounting only to 45,207 tons. Imports of briquettes were 45,394 tons, the greater portion coming from Belgium. This class of fuel shows a decrease of nearly 20% as compared with last year.

Exports for the nine months include 7,186,411 metric tons of coal; 1,699,289 tons of coke; 13,725 tons of brown coal; and 136,532 tons of briquettes. The largest amount of coal exported to any one country was to Austria-Hungary, 3,042,243 tons. The Netherlands took 2,357,045 tons; Belgium, 540,620 tons; Switerland, 537,992 tons, and France, 409,212 tons. For coke France and Austria were the largest customers, although Belgium took 272,079 tons, and Russia 108,735 tons. The brown coal went to Austria, and the briquettes chiefly to the Netherlands and Switzerland.

THE GOLD REGIONS OF GEORGIA.*

By William M. Brewer.

The history of gold mining in Georgia and Alabama antedates the discovery of gold in California. A very large proportion of the gold used in the United States previous to 1849 was produced by these States. A great deal of this history is merely tradition, and no reliable statistics can be obtained; yet a personal examination of the gold-fields of Georgia and Alabama indicates that tradition is as fairly reliable, with regard to the history of these gold regions, as it is in any similar cases throughout the world.

In Georgia, the history of gold mining dates back to 1829, when the first gold mining excitement in the United States occurred. In Alabama, the discovery of gold was made some years later through the work of prospectors, incited by the rich finds in the Georgia mining camps. The greatest product of gold in these States was between the years 1840 and 1849. All the gold mining carried on at that period was placer mining, and it was not until some years later that the auriferous quartz, which occurs throughout the Appalachian chain, received any attention. The first efforts at quartz mining were really conducted on the same crude principles as the placer mining. Such rude appliances as the arrastra, the Chilean mill, or stamp mills constructed (except the mortars) entirely of wood, were the only ones known to these pioneers.

It is not necessary to depend on history for a knowledge of the methods of mining quartz generally adopted through these States in the past. The examination of the old openings demonstrates the fact that the miners, after discovering pay ore in an outcrop, proceeded to take it out by following the body with a pit or inclined shaft until water interfered, or the ore became sulphuretted, or timbering became necessary. Apparently any one of these reasons was sufficient to cause the suspension of work in that particular opening. A return was then made to the surface, which was prospected along the line of strike of the formation, until another outcrop of gold bearing quartz was discovered, and the original operation was repeated.

The question, what portion of the rocks in this region belong properly to the Archæan period, has never yet been decided by geologists. Dr. Eugene A. Smith, State Geologist of Alabama, who has had more experience with this formation, at least in Alabama, than the majority of geologists, merely describes it as semi-and-fully-crystalline, without giving a decided opinion as to the geological period to which it belongs. This area of semi-and-fully-crystalline rocks enters Georgia from North Carolina on the north and South Carolina on the northeast, and extends across Georgia into Alabama, having Wetumpka, on the Coosa River, at its southwestern extremity. The region covered by these rocks has a triangular shape, and the area is very extensive. The southern boundary, from Augusta, on the Savannah River, to Wetumpka, on the Coosa River, is about 300 miles in length; the northwestern boundary, which may be represented by a line drawn from the North Carolina-Georgia boundary, commencing in the eastern part of Fannin County, across Georgia and to the Coosa River near Wetumpka, in Alabama, is about 250 miles in length, while the extreme width from northwest to southeast is about 300 miles, as represented by a line drawn from Fannin County, Ga., to Augusta. The semi-crystalline slates occupy a much larger area in Alabama than in Georgia. It is noticeable that, while in Georgia the auriferous quartz is usually inclosed in the fully-crystalline mica and hornblende schists and gneiss, in Alabama it is more frequently found in the semi-crystalline or the clay-slates. In Georgia, on the contrary, nearly all the occurrences of gold-bearing ore are inclosed in the fully-crystalline schists.

While the lines of strike and direction of dip through this entire gold-bearing region are regular, when considered as an entirety, yet locally, through faulting and folding, the formation is very complicated. The line of strike of the entire area is about N. 40° E., the dip of the strata varying from about 18° to 65° toward the east and southeast. In local complications the trend of the formation points toward almost every point of the compass, while the direction of the dip also varies.

Actual prospecting has demonstrated that the belts which contain gold-bearing ore are often entirely barren for several miles. The gold-bearing ores are really found in separate districts along the same belt of formation. For instance, a mineral map of Georgia shows a gold belt extending from the northeastern corner of Rabun County, in a southwesterly course, to the Alabama line in the western portion of Carroll County, and another extending from the Savannah River, in Habersham County, to the Alabama line, where it crosses Troup County. As a matter of fact, the gold-bearing character of these belts cannot be traced without break; but in certain districts along the belts both auriferous alluvium and auriferous quartz have been discovered, and these districts bear such a geographical relation to each other that, when marked on the map, the gold-bearing portions appear to be connected.

With regard to the timber and water supply, these important factors of mining industry, the gold-fields of Georgia and Alabama are especially favored. The timber supply in the mountains embraced in this region is not only practically inexhaustible in quantity, but a large proportion of it, being of first growth, is very desirable for mining timbers.

As most of the literature on this subject to-day is descriptive of Lumpkin County and the adjacent counties in Northeastern Georgia, I shall confine myself to a brief description of the conditions as they exist in Cherokee, McDuffie, Gwinnett, Hall and Carroll counties in Georgia.

Cherokee County possesses the only really deep workings in either of the two States. At the old Franklin Mine work is being carried on at an inclined depth of 507 ft., representing a vertical depth of about 450 ft. It is here that the only barrel-chlorination plant in Georgia has been erected. This was done in 1894, and since its completion the problem of saving the values contained by the sulphides in this ore has been solved both satisfactorily and profitably. A previous attempt to treat the concentrates by the cyanide process was a failure. The plant for the treatment of the ore (which, as I am informed, yields about 40% of its assay value in free gold, with the balance carried by the concentrates) is modeled after the plant at the Haile mine, South Carolina. It consists of a 20 stamp mill, "Embrey" and "Triumph" concentrating tables, roasters and barrel-chlorination plant. The capacity is 50 tons per day, and the cost of milling and chlorinating from the crude ore to the bullion brick, I am assured, does not exceed 65c. per ton.

Besides the Franklin mine, the Chester, Coggins, Browley and Georgiana mines are now worked in this county. These cannot be considered producers, and the work upon them is at present merely of a prospecting nature. The industry in the county employs about 200 men.

The gold-bearing ores in Carrol County occur in the same belt of formation as those in Cherokee County. But, so far as discoveries have determined, there are several breaks in the continuity of the auriferous bodies of quartz along the line of strike; so that while the formation maintains its continuity, there cannot be said to be a clearly defined "lead" of auriferous quartz. Considerable activity is being manifested at present in the vicinity of Villa Rica, which was one of the early gold-mining camps. An English company, which has recently bonded mining property near here, purposes sinking 300 ft. to ascertain the character and extent of the ore-bodies at that depth.

In Gwinnett County, near Buford, where the Piedmont mine is being developed, to ascertain what method of treatment and what scale of operations will be advisable, I find a well-defined true-fissure vein. The dip is vertical and the strike a few degrees north of west, while the dip of the country is about 20° east, and the line of strike northeast and southwest. Near the surface, this vein is almost imperceptible, but at a depth 85 ft. it has increased in thickness to nearly 3 ft. The country-rock is gneiss. The ore is a hard white quartz, occasionally showing native gold, and a large proportion of it carrying a heavy percentage of iron pyrites and argentiferous galena. A drift, 185 ft. long, shows that the vein maintains its continuity, at least for that distance. All the ore from Gwinnett County, even above water-level, carries a larger percentage of galena than in any other county I have observed in the State, with the exception of McDuffie and Wilkes. There appears to have been less placer-mining in this county than is usually the case where gold-bearing ore-bodies occur in as many localities as in this county.

Near Gainesville, in Hall County, active mining is going on at three places, namely, the Merck mine, a mile and a quarter from Gainesville; the Currahee, near White Sulphur, 6 miles northeast of Gainesville; and the Potosi, about 12 miles in a northwesterly direction from Gainesville. The first two of these occur in a hydro-mica schist country-rock, and the last in the gneiss. The Merck is a recent discovery; and two miners from Colorado have bonded the property, and are now prospecting. The work has not progressed sufficiently to expose rock in place. In a tunnel which crosscuts the ore-body about 30 ft. below the surface, it shows a thickness of about 5 ft., but is very much broken up; and until the work is prosecuted further, no reliable opinion can be formed of its character.

At the Currahee mine, five prospecting tunnels have been run, the longest of which is 460 ft., and in the face a body of ore is exposed which is clearly a bedded vein, having strike and dip conformable with the enclosing formation. The ore is extremely refractory, carrying a large percentage of iron pyrites, galena, zinc and arsenic, as well as some antimony. In order to overcome the rebellious nature of this ore, the company purposes testing a method of treatment, which is described as "dry chlorination," and which has been practiced in the laboratory, but has not been proved on a commercial scale. The last-named of these locations, the Potosi, is one of the oldest placer mines in Georgia, having been worked as early as 1830. This property is now being prospected for auriferous quartz.

Several years ago, dredge-boats are said to have been profitably worked on the Chestatee River. In 1894, Mr. Jaquiwitch, of Gainesville, tried the experiment of operating such machinery at Louisville. He has kept his boat in continuous operation since then, and there have been two others put in the river at different points above him. The sand and gravel from the bed of the stream is hoisted into sluice-boxes arranged on the boat, and the gold is saved by the same method of sluicing as in placer-mining. The Chestatee River drains Lumpkin and White Counties, which have produced the largest amounts in nuggets and gold-dust of all counties in the State. The operations conducted on this river alone, including hydraulicking, dredging and sluicing, are of sufficient importance to be described in a separate paper.

Of McDuffie and Wikes counties little has been written, though the most successful quartz-mining in the State is being done in this district. Quartz-mining and treatment of the ore by amalgation in a 5-stamp mill, furnished with 450-lb. stamps, and run by the water power supplied from Little River, have been carried on for upwards of 30 years, almost continuously. The value of the ore varies from $7 or $8 a ton, up to very high grades. By the old system, the ore was taken out to an inclined depth of some 200 ft. from the outcrop. The workings which are at present in active operation, include two vertical shafts each 160 ft. deep. No apparatus for concentration is attached to the mill; and consequently, for the past 40 years, whenever sulphuretted ore has been milled, a large proportion of its value has passed into the river. Occasionally, when the river is low, it has been the custom to work this bed of tailings through sluice-boxes, the result always being that the miners more than earned their wages.

*Abstract of paper read at the Atlanta meeting of the American Institute of Mining Engineers.

Calcium Carbide.—A recent number of the "Zeitschrift fur Elektrotechnik und Elektrochemie" says that at the annual meeting of the German Electro-Chemical Society Dr. U. Borchers exhibited an apparatus by which he not only succeeded, nearly 10 years ago, in preparing calcium carbide, but also showed that all the oxides which were regarded as irreducible could easily be reduced by the action of carbon. It consists of a small chamber or furnace of fire-brick, through the walls of which pass thick carbon rods 40 mm. in diameter. Inside the chamber these are connected by a thinner carbon rod, 4 mm. in diameter and 40 mm. long. The furnace is fed with a mixture of lime and carbon. The action is not electrolytic, the effect of the current being simply to heat the lime to a temperature at which it is reduced by the carbon. An electro-motive force of 12 volts and a current of 90 amperes is used. The current may be either direct or alternating; and by diminishing the length of the thinner rod calcium carbide can be produced with an electro-motive force of only one volt, so that electrolysis is out of the question. The reactions which take place are (1) $CaO + C = Ca + CO$; (2) $Ca + C_2 = CaC_2$. These reactions are supposed to have been discovered by Moissan and Wilson, but Dr. Borchers refers to publications by Wohler (1862) and himself (1891).

STALL ROASTING.

There is a most interesting chapter in the new edition of Dr. Peters' work on "Modern Copper Smelting," dealing with the construction, management and cost of stall roasting, both as applied to ores and mattes.

The two illustrations referred to are respectively a cross section and ground plan, and thoroughly illustrate a very excellent design.

The estimates of cost we are satisfied are quite trustworthy. The only thing to be taken into account in connection with this is the fact that Dr. Peters takes for granted that slag is available with which to make bricks, thereby supplying the material for construction at a very low price. In our own experience we have known the cost of construction of very similarly designed stalls for one-half the tonnage to cost a good deal more than Dr. Peters has estimated; but this, of course, was entirely owing to the fact that the material used was brick, and that at $11 a thousand. These conditions must necessarily be taken into consideration when the prime cost for stalls is considered.

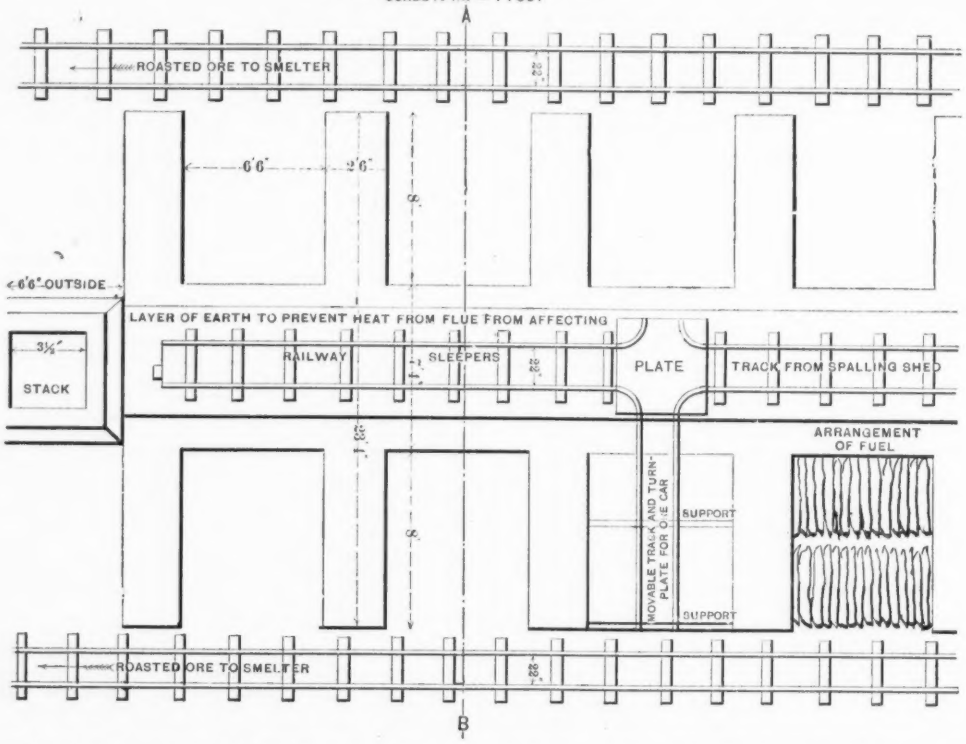
The cost of operation is certainly cheap, especially during the first two years of the life of the stalls, and the roasted product has a most valuable advantage over that from any ordinary reverberatory or mechanical roasting furnace for blast furnace purposes, being in the most perfect lump form and devoid of fines, thereby reducing the mechanical loss by dust in the blast furnace to a minimum.

With reference to roasting stalls of most approved design, according to Dr. Peters, and assuming that they are built of slag bricks, and without any ironwork for anchoring, and that each stall is to burn a charge of 20 tons and be again cleared out in 10 days, thus furnishing two tons a day, it will require some 56 stalls to furnish 100 tons of ore a day, allowing some 12% in excess of the needful capacity to permit of repairs. The weight of ore as brought to the stalls, and not as taken from them, is counted: its loss during the process of calcination depends upon the quality and amount of sulphur present, and frequently reaches 15%, little gangue, and especially than one containing a considerable portion of iron pyrites, in which case extensive and unavoidable sintering will follow any attempt at increasing the size of the stall. A safe size for an average ore, containing a moderate amount of pyrite and demanding careful handling, is 8 ft. in length, by 6 ft. in height, by 8 ft. in width. It is best to build the lateral walls of the same thickness as the rear division, the increased stability and durability of the entire structure well repaying the slight additional expense in labor and material. The bottom should be paved with the same slabs, placed flatwise, and exactly reversed from the position in which they lay when formed, their upper surface now going downward, while their original lower surface, which should be perfectly smooth and level, now comes upward. The connection with the main flue is effected by means of 8 or 10 small rectangular openings—2 × 6 in.—in the rear wall, in two or more rows, and at a considerable distance from the ground. These are kept tightly closed by means of a bunch of old rags or a ball of clay, when there is no occasion for their remaining open; otherwise, the draught of the entire system might suffer.

The only a r admitted to these stalls originally, at the Parrot Works, came through such interstices as were left in roughly building up the temporary front wall; but experiments led to the addition of some four or six similar openings in each lateral wall, which did not communicate with the main culvert, but connected with the outside air by means of a small flue running longitudinally through each division wall though not extending so far as the central passage. This innovation has been followed by a decided improvement in the oxidation of the ore and a great diminution in the amount of matte produced. An essential precaution in the management of these stalls is to maintain a thick coat of clay plastering over their entire interior surface, by which the heated ore is kept from sticking to the walls and causing the rapid destruction of the mason work. A few moments' attention to the empty structure after each operation will keep the plastering intact and greatly lessen the cost of repairs. As the entire success of this process depends upon the strength and

ROAST STALLS FOR ORE.

SCALE ⅛ IN. = 1 FOOT



though a considerable portion of the loss in weight due to the elimination of the sulphur is offset by the gain in oxygen. Such a battery of stalls should always be built in a double row, back to back, each lateral wall serving as the division between the two adjacent partitions, while the unbroken rear walls form the sides of the main flue, a space of at least 2 ft. being left between them which simply requires a 4-in. brick arch to form the main flue for the entire system. . . . A double row of 28 stalls (56 in all) should have a flue at least 2 × 4 ft. for the third of the number nearest the chimney, which may be reduced to 2 × 3 ft. for the middle, and 2 × 2½ ft. for the end third, if any saving can be effected thereby. The two long rear walls, enclosing the main flue, should be 32 in. thick—once and a half the length of a slag-brick—with proper allowance for mortar and irregularities, and should be laid solely in clay mortar, which designation throughout this entire work may be understood to mean merely common sticky mud, such as is employed for making a poor quality of red brick. If ordinary clay be accessible, it may be mixed with sand in such proportions as to slip easily from the trowel; otherwise, any ordinary sticky mud may be used, and will be found to form perfectly satisfactory material for laying all mason work that is to be exposed to sulphur fumes and a heat not exceeding a dull red. The fact that lime mortar is totally unadapted to ordinary metallurgical uses, although doubtless universally known, is for some unaccountable reason frequently not acted upon, and the result in most cases is the rapid and total destruction of the furnace-arch, chimney, flue, or whatever structure may happen to have been put together with such unfit material. . . .

The size of the stall is somewhat dependent upon the quality of the ore to be roasted, a highly siliceous ore with a comparatively low percentage of sulphur, permitting a much wider and higher stall than an ore with regularity of the draught, a stack of considerable size and height is essential.

A battery of 56 stalls, as described, requires at sea-level a chimney 75 ft. high, and with an internal area of at least 12 sq. ft. Any economy in the direction of diminishing the size of this important adjunct will be immediately noticed in the lengthening of the roasting process, and may reduce the capacity of the stalls to an incredible degree. The draught is regulated by means of a sheet-iron damper hung in the main flue, close to its junction with the chimney, while the same office is accomplished for individual stalls by partially filling the draught-holes in the rear wall with bits of bricks or balls of clay. In no portion of the process are the skill and care of the roasting foreman better displayed than in his management of the draught, which must be varied according to the season and temperature of the air, as well as with the changing character of the ore.

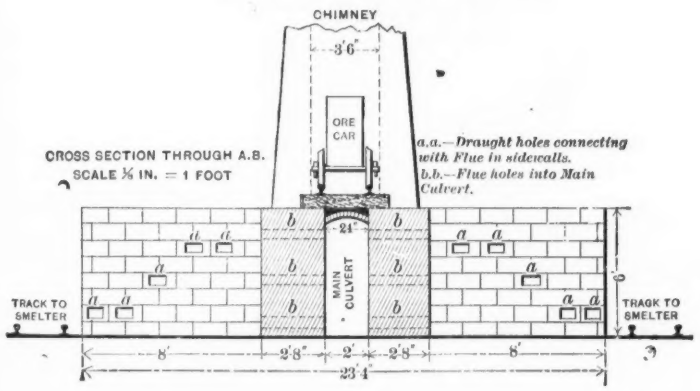
As already intimated, a stall of the size and pattern just described will hold 20 to 30 tons of pyritous ore, which should be kindled with the very smallest possible quantity of wood that will set it thoroughly on fire. This is essential for a far more important reason than the mere saving in fuel; for the slightest increase in the contents of the bed of wood on which the rock is heated will, with pyritous or otherwise easily fusible ores, cause an amount of sintering and a formation of matte entirely disproportionate to the cause. Repeated trials can alone determine the various minutiæ of this description under treatment; but, in most cases, where the ore is at all pyritous, good sound wood will be found to produce too fierce a heat for the purpose, and recourse must be had to decayed wood, which can usually be obtained at from one-half to two-third of the price of the sound fuel. For an ore containing 30% sulphur and say 35% silica, 25 cu. ft. of rotten wood, or about one-fifth of a cord, will be found ample;

but this small proportion of fuel—only one-hundreth of a cord to the ton—must be utilized in a proper manner, and with the most rigid economy and exactitude, or the heap will miss fire completely, doubling the cost of the operation, as well as interfering with the estimated production of the plant. A quarter of an hour spent in watching the manipulations of an experienced roaster is better than pages of description, though the operation of preparing a stall for its ore charge is far from complicated.

After seeing that the layer of clay on the enclosing walls is renewed with the plastering trowel where necessary, and that the draught holes are open to the extent dictated by former experience, a central longitudinal and two lateral flues are constructed on the floor of the stall out of large, irregular fragments of ore. These are merely to introduce air to the interior and to insure the rapid and thorough kindling of the entire structure. They are filled and surrounded with dry kindling wood, and the greater part of the fuel split into long, thin sticks from the large rotten logs and poles that are usually provided, is disposed in a thin layer over the bottom of the stall, the amount slightly increasing toward each side. The structure is now filled with coarse ore, and the ragging distributed throughout the entire contents rather than concentrated in a considerable layer merely upon the surface. As the stall becomes gradually filled, single small sticks of wood are placed between the ore and the lateral and back walls; while between the contents of the stall and the front wall, which is built up with large lumps of ore or stall matte, a considerable quantity of light wood is introduced to insure the thorough desulphurization of the anterior surface. A single carload of ragging is spread on top of the coarse ore, and upon this a 3-in. layer of shavings, bark and chips is placed as bed for about one and a half tons of raw fines, which, if disposed in the exact manner indicated, and covered closely with a well-roasted ore from a contiguous stall, will be thoroughly desulphurized, and the covering layer itself being in a well calcined condition, the entire contents, after burning, may be passed on to the next operation. Mr. R. Pearce, of Argo, uses with great advantage a sheet iron cover over the top of his stalls, luted tightly with clay to the walls on which it rests.

It is only by employing great care, and after repeated trials, that the requisite skill will be attained to thoroughly calcine the large proportion of fines just indicated; but when one reflects that it amounts to some 7% of the entire ore, and perhaps one-half of the total fines produced, it will be seen that the result is worthy of any pains that can be expended on it. The large pieces of raw ore that are employed in building the flues and front wall become gradually oxidized upon the surface, and slowly crumble away and mix with the finished product until they totally disappear and are replaced by fresh pieces. When the ore is to be removed the front wall is taken down, and the lumps of ore from it are piled out of the way, to be again used for the same purpose.

ROAST STALLS FOR ORE.



The stall should be fired at night, as the smoke is so dense during the first few hours, and the draught so sluggish that only a small part of the fumes find their way into the proper channel; but by the time the wood is consumed, the entire structure has become so much warmer as greatly to improve the draught. The sulphur and other products of volatilization and "sweating"—alluded to in describing the managementof roast-heaps—form a sort of crust upon the surface, and seal all interstices connecting with the atmosphere, and force nearly all fumes to pass into the flue, thus greatly abating a nuisance. For the first 24 hours, the fire is confined to those portions of the ore that were in immediate contact with the fuel. The process of oxidation advances very rapidly, and by the close of the second day it is hardly possible to bear the hand upon the middle of the upper surface of the stall, showing that at least one-half the contents is already in combustion. By the end of the fourth day a similar degree of temperature may be felt upon the upper surface, at the very back of the stall, proving that the process has by that time invaded the entire length and breadth of the stall, though considerable time is still necessary for its thorough completion.

Even the economy in first cost of plant will be found more apparent than real, when the expense of the trestle work and track, as well as the establishment of the different grades between spalling-shed, roast-yard and smelting-house levels are considered, and no one will deny the absolute necessity for such an arrangement if work on a large scale is to be prosecuted with any degree of economy.

A careful comparative calculation of costs, corrected by the results of actual work, shows that, under ordinary circumstances, the difference in cost between the two plans under consideration is too trifling to have much weight in the choice of methods, and may even be on the side of the stalls in cases where the natural conformation of the land is unfavorable for the establishment of the terraces necessary for cheap heap-roasting.

A far more important reason for the adoption of the stall system is the great saving in time, by which the delay incidental to the cruder process of calcination is diminished by at least 80%.

ESTIMATED COST OF 56 ROASTING STALLS, EXCLUSIVE OF STACK.

(Usual capacity 100 tons daily.)

The total expense of the finished stalls may be conveniently divided into the following heads:

1. Excavation for foundations.
2. Cost of slag-brick, clay and other building materials delivered on the ground.
3. Labor in building the stalls.
4. Total expense of the railroads belonging to this part of the plant.
5. Miscellaneous expenses and superintendence.

1. Excavation for foundations:

Labor, 60 days at $1.50	$90
Removing the excavated material	35
Superintendence and miscellaneous extras	32
Total	$157
Main walls	15,700 slag-brick
Foundation walls	5,250 "
Paving	2,080 "

2. Cost of materials for mason-work:

23,000 slag-brick, at 2c	$460
235 tons clay, at $1	235
Mortar-boxes, hods, screens, etc	45
Total	$740

3. Labor in building stalls.

Estimate for laying 100 brick:

One stonemason	$3.00
Two laborers at $1 50	3.00
Mixing mortar for same	50
Carrying mortar and other miscellaneous labor	15
Superintendence	35
Total for 100 brick	$7.00
Total for 23,000 brick	$1,610

4. Cost of railroad tracks.

Weight of iron:	
200 yards rails at 12 lbs. = 2,400 lbs.	
Spikes, bolts and fish-plates = 115 "	
Total 2,515 lbs. × 3½c.	$88.02.
Sleepers:	
125 containing 6 ft. each = 750 ft. at $25 per M	$18.75
Labor:	
Grading, laying track, ballasting, etc	$13.50
Superintendence	6.00
Total	$19.50
Average allowance for curves and switches	13.63
10% for incidentals	14.00
	$153.90

5. Miscellaneous expenses and superintendence:

	$211.00
Cost of 4-in. brick arch to cover main flue	137.00
	$348.00

Summary.

Excavation for foundations	$157.00
Materials for mason-work	740 00
Labor in building stalls	1,610.00
Railroads	448.80
Miscellaneous and superintendence	348.00
Grand total	$3,303.80

Uneven ground, bad weather, and other unfavorable causes may increase this sum to a considerable extent, but the figures given will be found safe under ordinary circumstances and with strictly judicious and economical management.

The calcination of matte in ore stalls of the pattern just described is by no means impossible, the principal difference between its treatment and that of ore being the increased quantity of fuel required—about three times as much. A considerable proportion of the matte will be fused during the operation, and another large fraction scarcely affected by the process; so that from three to four burnings are required to affect any reasonably perfect desulphurication.

This practice cannot be recommended, as much better results are obtained by providing the stalls with grate-bars, and preventing the radiation of heat from the surface by means of an arched brick roof.

Nystagmus, the Eye Disease of Coal-Miners.—According to an article in "Gluckauf," the disease known as nystagmus appears to have been first known about 1860, and it has been noticed that it has increased since then in all coal-mining countries. The principal symptom of the disease is that the miner, after a long shift, finds his sight unsteady, and his light appears to be in continual movement. A short interval of rest is sufficient to remove this unpleasant sensation. When the disease is more acute, the miner is attacked at his work, and finds that he cannot see to hold his tools; he has headaches; and, finally, cannot walk straight. Any attempt to see things by ordinary light above the horizontal level brings on the nystagmus. In one district, Dr. Nieden examined 11,145 men, and found that 3·6% suffered from nystagnus. The proportion between those coming from work and those going to work was as 4·1 to 3·1%.

All those who have studied the subject agree that the disease is confined to those men who mine the coal, and who lie cramped up in a lying position, very often having to look upward. The muscles of the eye cannot bear the excessive strain, which is aggravated by the poor quality of the light. It has been noticed that nystagmus is much more frequent in mines where safety-lamps are used than it is in mines where there are naked lights. As evidence of the important part that the quality of the light plays in connection with the disease, it is said that at the Rhein Elbe collieries in 1877, when naked lights were used, 0·7% of the men suffered from nystagmus; three years later, after safety-lamps had been introduced, the percentage rose to 3·05. The author has no doubt that the introduction of a better light in mines would reduce the disease.

AN ELECTRIC PUMPING PLANT.

The entire change in the conditions governing water supplies, which the introduction of electric pumping has brought about, are well illustrated in the plant recently put in operation by the Fulton Woollen Mills at Oswego Falls, N. Y. The source of supply for these mills is Lake Neahtawanta, situated about one half a mile from the mills, and here a substantial brick pump house has been built, 25 ft. × 35 ft. in size. The accompanying view is from a photograph of the interior of this building.

The pumping apparatus consists of two 8-in. diameter and 12-in. stroke of cylinder triplex power pumps, made by the Goulds Manufacturing Company, at Seneca Falls, N. Y. The pumps at 40 revolutions per minute have a capacity of 624 gals. They are operated by a Westinghouse motor, running at 1,300 revolutions per minute, which is belted to a counter-shaft, to which the pump shafts are connected by means of two friction clutches, rendering it possible to operate the pumps singly or in pairs, and to start or stop them without the necessity of stopping the motor.

The current for operating the motor is supplied from the dynamo which is used to light the mill, and the entire installation shows the adaptability of electric power in furnishing water supply not alone for mills and factories, but for domestic use and fire purposes as well, now that the success and reliability of such applications are assured.

THE MARKET FOR ALABAMA IRON.*

By James Bowron.

The author first gave the statistics of the production of pig iron in 1894 in the United States, also in the states of Alabama and Tennessee. He next gave the area over which the distribution of the product of the Tennessee Coal, Iron and Railroad Company was made for the years 1888 and for the 12 months ending July 1st, 1895. From this comparative statement he showed that in the former year the product was distributed over 30 States and that in the latter over 39 States, as well as to Canada, Mexico England, Nova Scotia and Italy, the total product amounting to 572,910 tons for 12 months ending July 1st, 1895, as against 224,634 tons in 1888. Of this product in 1895 the number of tons exported was 2,698. The writer drew attention to the fact that it is the development of the home market that the Birmingham district must look to for our profitable business.

He said that there are three ways in which the market for Alabama iron may be enlarged: namely, the development of (1) the home market; (2) the domestic; (3) the foreign. He set forth fully the methods he advised to reach these desirable ends, advocated emphatically the securing of a closer uniformity in grading and naming iron and selling it upon terms of uniformity. He further advocated the organizing of a strong local trade association to bring about these results.

With regard to developing the foreign market he drew attention to the fact that when prices of Birmingham iron were at the lowest notch, on April 1st, 1895, it was possible to put iron for export f. o. b., shipped at tidewater in Pensacola or Mobile harbor, $2 per ton below the corresponding value of the cheapest English iron, it was found practicable to lay iron down in Liverpool, grade for grade, at less than the price of Middlesboro iron shipped across England to that point. The facts were also shown that at those figures we have an exceedingly good chance for competition in all Mediterranean ports, such as Barcelona, Genoa or Civita Vecchia. The writer also referred to the possibility of exporting coal and coke also to these ports; the main difficulty being the question of commanding marine tonnage. In conclusion he says: "The same remarks apply with as great force to the less important markets of Bombay, Calcutta, Melbourne, Yokohama and others. These markets are dominated both in pig iron, in iron pipe, in coal and in coke by the English, because of the present exchange of commodities, which has settled steamers and sailing vessels in certain marine lines of travel, from which it will require patience and perseverance on our part to divert them."

*Abstract of paper read before the Alabama Industrial and Scientific Society, November, 1895.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

COURT OF APPEALS OF VIRGINIA.

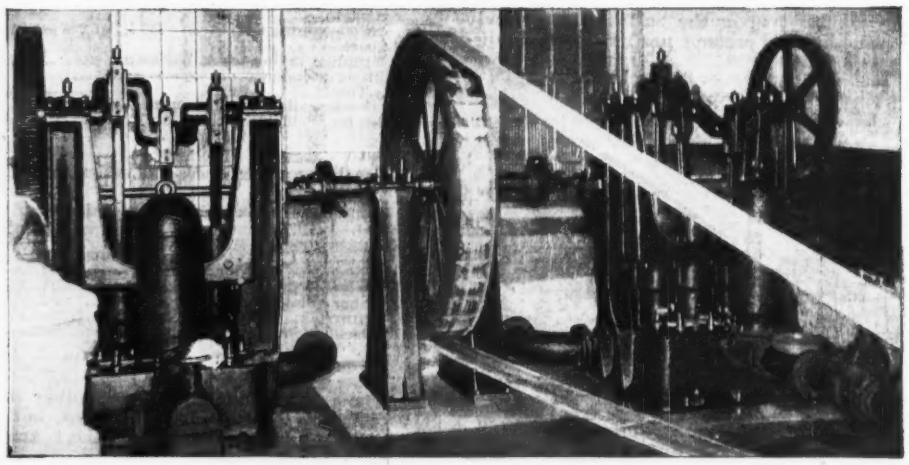
Negligence of Employer.—It is not negligence, of itself, for an employee to warm his hands in cold weather at a fire where dynamite is being thawed, where there is evidence that the fire was built for the purpose of allowing the employees to warm themselves, as well as thawing the dynamite, and that the employer knew that his men were so using the fire. In thawing dynamite such reasonable care is required of the employer as is commensurate with the danger that may be apprehended from such use, and such ordinary care as reasonable and prudent men under like circumstances use in thawing such material. This kind of care must be ascertained by the general usages of the business, as "ordinary" care must depend upon the peculiar circumstances of each case.—Bertha Zinc Company vs. Martin's Administrator, 22 Southeast Reporter, 869.

SUPREME COURT OF OREGON.

Construction of Mining Laws.—Picking rock from the walls of a shaft or outcropping of a ledge, in small quantities, from day to day, and testing it in order to find a paying vein, cannot be credited as part of the $100 worth "of work and improvements" required to be made by the locator on his claim within one year from the date of his location, by the Revised Statutes of the United States.—Bishop vs. Baisley, 41 Pacific Reporter, 936.

SUPREME COURT OF MICHIGAN.

Negligence of a Fellow-Employee in Mine.—A party employed to loed ore on cars brought to the floor by the miners. It was the practice, as successive spaces were cleared of ore, to support the roof by timbers put in on notice from the miners, or through the shift boss. Before a newly opened space had been put in condition for the timber men, and before they were notified that their services were required, this party was injured by ore falling from the roof. There was evidence that too large a space had been mined, and that just before the accident the foreman's attention had been called to the roof, and he said it was all right. The Court held that if there was any negligence it was that of a fellow-servant.—Petaja vs. Aurora Iron Mining Company, 64 Northwestern Reporter, 335.



Electric Pumping Plant at Oswego Falls, N. Y.

Mining in Guatemala.—The mineral products of the Republic of Guatemala are gold, silver, iron, copper, lead, marble, gypsum, sulphur, bituminous coal and salt. The principal mines now being exploited are the gold mines on the Motagua River, department of Izamal and Baja Verapaz; the silver mines at Mataquescuintla, department of Santa Rosa, and at Alotepeque, department of Chiquimula; the salt deposits of Nueve Cerros, department of Alta Verapaz, and of Chiquimulilla, department of Santa Rosa.

PATENTS RELATING TO MINING AND METALLURGY.

Great Britain.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy:

WEEK ENDING NOVEMBER 9TH, 1895.

16,604 of 1804. F. M. McLarty, Penang, Straits Settlements. In prospecting drills apparatus for bringing up continuously and without jamming the excavated material, working independently of the direction of rotation of the drill.

11,072 of 1895. E. Fischer, E. Klein and F. Mahlstedt, Breslau, Germany. Use of a lead amalgam for extracting gold and silver from pyritic ores.

14,692 of 1895. C. A. Fargo and P. J. Harrigan, Marysville, Montana, U. S. A. In stamp mills making the stem guides of two parts with tapering outer surfaces, and wedge pieces inserted between each couple so that the stems never work loosely.

WEEK ENDING NOVEMBER 16TH, 1895.

23,117 of 1894. L. P. Hulin, Modane, France. Method of making electrolytically alloys of heavy and light metals directly from mixtures of their salts.

6,098 of 1895. N. J. Suckling, Pretoria, S. A. R. Stamp mills for crushing dry with closed mortar boxes, and supplied with current of compresed air for the purpose of driving the crushed material through the screens to chambers beyond.

PERSONAL.

Mr. Eugene Delano, of Brown Brothers & Co., has been elected a director of the Lehigh Valley Railroad Company in place of John R. Fell, deceased.

Mr. George E. Hogg, mining engineer, has been reappointed superintendent of the Comstock Tunnel Company, at Sutro, Lyon County, Nev.

Mr. William G. Neilson has resigned as acting manager of the Taylor Iron and Steel Company of High Bridge, N. J., and is now on a business trip South.

Capt. H. A. Judd, of the firm of Eames & Judd, mining engineers, of Gold Hill, N. C., has gone to Cripple Creek, Colo. He will also visit some Gilpin County mines.

Mr. A. J. Reilly, heretofore Assistant Mining Engineer of the Pratt Mines division of the Tennessee Coal, Iron & Railroad Company's works, has been appointed Mining Engineer of the division.

Mr. Geo. W. Maynard, mining engineer, of New York City, is at present in Denver, Colo. He has recently visited the Routt County placers for some of his clients. Mr. Maynard is well known in Colorado, and established the first assay office there in 1864.

Mr. H. S. Haselton, Secretary of the Metropolitan Iron & Land Company, of Milwaukee, Wis., has been elected a director in place of the late Francis Hinton. Mr. John A. Whaling also will succeed Mr. L. J. Pettit, the treasurer, who has resigned to go abroad.

Mr. Arthur W. B. Whiteley, mining engineer, of Mine Centre, Ont., has resigned his position as manager of the Little American Mining Company, Rainy Lake City, Minn., to take charge of explorations for the English syndicate on the Seine River, Ont.

Mr. Erskine Ramsay, superintendent of the Pratt Mines Division of the Tennessee Coal Iron and Rail road Company, has been promoted to the office of assistant general manager and chief engineer. He will be succeeded as superintendent by Mr. P. J. Rogers, warden of the Pratt mines convict prisons. Mr. Rogers will retain the position as warden in addition to the new office.

OBITUARY.

Henry Galley died at Uniontown, Pa., on December 3d, aged 76 years. He was interested in the development of the Connellsville coke region, where he owned the coal lands.

Jefferson D. Day, Superintendent of the Metropolitan Iron and Land Company, operating the Norrie mines, died at Lake Linden, Mich., on December 6th, aged 55 years. He had been prominently connected with Lake Superior mining interests since 1870.

William G. Power, for many years a resident of New Castle, Pa., and who was well known to those engaged in the iron business in Pittsburg and vicinity, owing to his connection with the firm of Reis, Brown & Berger, died at Old Orchard, a suburb of St. Louis, Mo , on December 2d, aged 76 years.

Samuel G. Lewis, ex-controller of the Pennsylvania Railroad, died at Philadelphia, Pa., on December 9th, aged 68 years. In 1853 he entered the accounting department of the Pennsylvania Railroad rnd was successively assistant auditor, auditor and controller. He resigned in 1874 after 21 years of service.

John Saylor Davis, who for the past 12 years was president of the Philadelphia Petroleum and Mining Exchange, died suddenly on December 10th, at his home at Kane, Pa., aged 52 years. He was a member of the Consolidated Stock and Petroleum Exchange of New York, and the Oil City Exchange, and was identified with the Standard Oil Company.

John Ahearn, died in Baltimore, Md., last week, aged 84 years. He was a well-known Maryland ironmaster. He was born in Philadelphia, but went to Baltimore in 1839 and became actively engaged in many Maryland enterprises. In 1850 he built the Stickney Iron Works, at Baltimore, and was proprietor of that establishment until the close of the war.

J. H. Ferguson died suddenly in Denver, Colo., on December 7th. He went to Denver from Pittsburg as the representative of the Pennsylvania Lead Company. He was also identified with a smelter at Salt Lake City. At one time he visited Alaska in connection with an exploring expedition and after settling in Colorado he organized the Alaska Steamship and Exploration Company, to mine coal and develop gold and silver mining properties.

SOCIETIES AND TECHNICAL SCHOOLS.

Canadian Society of Civil Engineers.—The ordinary meeting, was held in Montreal, on December 5th. A paper on "A New Method for the Design of Retaining Walls," was read by W. Bell Dawson. Arrangements in connection with the annual meeting in January next was discussed and the following was suggested as a topic for discussion at the meeting on December 19th, "The Most Suitable Shape of Timber for Testing."

Ontario School of Mining.—Circulars have been issued by the School of Mining, Kingston, Ont., for its prospectors' course, which will open on January 8th next and will continue for eight weeks. Several special courses of instruction are offered, including lectures by Dr. Goodwin on chemistry, by Professor Nicol on mineralogy, blow-piping and assaying, by Mr. Miller on geology and lithology, by Mr. Hamilton Merritt on the discovery and winning of ores and milling, by Mr. Brock on assaying, and by Mr. Mason on drawing. The work throughout will be thoroughly practical.

Idaho State University.—The newly-established department of mining has begun to attract the attention of mining men in various sections of the State, and numerous offers of a practical nature have been received. The recent mining cases in the United States Court brought a number of prominent miners from the Cœur d'Alenes to Moscow, and all of them improved the opportunity to familiarize themselves with the work of the department and express their interest in it. Professor Goodwin is arranging for a short practical course for miners and prospectors, to begin about January 1st. A good attendance is looked for.

Geological Society of America.—The annual meeting of the Geological Society of America, American Society of Naturalists, American Physiological Society, Association of American Anatomists, and the American Psychological Association will be held on December 26th, 27th and 28th, at the University of Pennsylvania. Three of the societies met last year and held a most successful session. It is expected that the present session will be equally successful. Arrangements are being made to entertain 200 delegates, invitations being extended to all the prominent scientists of America. The university committee to receive the visitors consists of Prof. E. D. Cope, Chairman; Dr. Horace Jayne, Dr. Persifor Frazer, Dr. Harrison Allen, Dr. Edward J. Reichers, and Dr. W. R. Newbold.

The Foundrymen's Association.—The regular monthly meeting of the Foundrymen's Association was held in Philadelphia, on December 4. The Executive Committee's report was as follows: "Our last report stated that a majority of the foundries were busy, and that prices were about the same. The question now to be solved is how much business are we to have early in 1896, and is pig iron going up or down? We do not think the price of pig iron is quite as strong as it was, but we understand there is not much stock in the banks, and the demand will, of course, have its effect. There is no good reason why the foundry trade should not steadily improve, as there is nothing, not even the question of finance, that should interfere to prevent making the year 1896 a prosperous one." Dr. J. F. Clement, of Philadelphia, than read a paper on "the Clement Pneumatic Tools for Cleaning and Chipping Castings, Calking Boilers and Carving on Stone." A paper by Thos. D. West was next read, on the "Diffusion and Segregation of Metalloids at the Furnace and Foundry and Methods for Lessening Their Final Evil Effects." The meeting closed with a general discussion on strikes.

Engineers' Club of St. Louis.—The 425th meeting, held on December 4th, was also the annual meeting. The president read the annual report of the executive committee. The annual reports of the secretary and librarian and treasurer were then read, and the various committees submitted reports. The committee on nominations of officers for 1896 reported as follows: President, J. A. Ockerson; vice-president, Edward Flad; secretary, William H. Bryan; treasurer, Thomas B. McMath; librarian, W. A. Layman; directors, S. B. Russell and Carl Gayler; representatives on the board of managers of the Association of Engineering Societies, J. B. Johnson and W. E. Barns. Additional nominations being called for, B. H. Colby and N. W. Eayrs were placed in nomination for vice-president, and William Bouton, Julius Baier, M. L. Holman and B. L. Crosby for directors. C. H. Sharman then read a paper prepared by R. J. McCarthy, of Kansas City, on the subject of smoke prevention, which paper had already been read by the author before the Engineers' Club of Kansas City. Prof. J. H. Kinealy then exhibited a new form of draught gauge, which remedied many of the troubles incident to the ordinary forms of apparatus.

INDUSTRIA' NOTES.

The large blast furnace of the Andover Iron Company, at Phillipsburg, N. J., started up last week. It had been idle for about two years.

The iron foundry of Milligan & Co., at Pottstown, Pa., was burned to the ground on December 6th. The plant employed 20 men, and the loss is placed at $10,000.

The Utica Drop Forge and Tool Company has been organized in Utica, N. Y., with $50,000 capital stock, by W. M. White, C. C. Kellogg, T. R. Proctor and John P. Campbell.

Operations were indefinitely suspended on December 9th in the 10-in. rolling mills of the Pennsylvania Bolt and Nut Works Company, at Lebanon, Pa., owing to a scarcity of orders.

The Cameron, Neilson, Richards, Hickory Ridge and Hickory Swamp collieries, at Shamokin, Pa., were compelled to suspend operations on December 5th, on account of the scarcity of empty cars.

A Chicago despatch says that the shutdown of the mills of the East Chicago Iron and Steel Company was caused by shortage of coal and not by inability to pay the employees, as was reported last week.

Kelley, Spear & Company, of Bath, Me., have closed a contract with the Delaware & Hudson Canal Company for two tow barges, one 190 ft. over all and of 1,600 tons capacity and the other 155 ft. over all and of 800 tons capacity.

The Aluminum Plumbers' Supply Company has been organized in New York to manufacture plumbers' supplies of aluminum in New York City; capital, $10,000 and Directors T. Millot, Constant Deerdon, Milton Schanier and X. Herme, of New York City.

Phillips & McLaren have succeeded to the Fisher Engine, Foundry & Machine Works, carried on by the late William Fisher, of Pittsburg, Pa. The firm will continue to manufacture bar, guide, sheet and plate shears, engines, rods, lathes, machinery and castings for mills, steel works, etc.

On December 7th the butt-weld department of the National Tube Works, at McKeesport, Pa., shut down and will not start up again until the first of the year. It affects about 3,000 men and boys. It is given out that the cause of the shutdown is to make repairs, but heretofore only two weeks have been taken for this work.

The North American Alkali Company has been organized at York, Livingston County, N. Y., to manufacture all kinds of acids, alkalis, etc., capital, $1,000,000, and directors, J. M. Horton, William Foster and W. J. Thompson, of New York, and W. B. Orcut, of Chicago.

The Barnes Manufacturing Company has been organized at Mansfield, O., with a capital of $100,000, for the purpose of manufacturing iron and brass pumps. It expects to be in operation by February 1st, 1896. Mr. F. R. Barnes, formerly secretary of the Humphreys Manufacturing Company, of Youngstown, O., is secretary.

The Speer White Sand Company, doing business in Centre, Huntingdon and Fayette counties, Pennsylvania, has made an assignment to the Mercantile Trust Company, of Pittsburg, Pa., for the benefit of the creditors. W. H. Frederick and Samuel Gaston, of Pittsburg, were named as appraisers. Over 300 employees thus become idle.

In the United States Circuit Court, New York City, on December 10th, Judge Townsend handed down a decision dismissing the long contested action of the Illinois Steel Company against the Kilmer Manufacturing Company, of Newburgh, N. Y., et al., for alleged improvements upon patents for improvements in rolling mill plants.

The McCormick Company, of Harrisburg, Pa. will hereafter be known as the Paxton Iron and Steel Company. It is one of the oldest in Central Pennsylvania and owns several furnaces, among them the Paxtons at Harrisburg and the Swatara furnaces at Union Deposit, Pa., in addition to the Paxton rolling mills and a puddle mill and a nail factory at West Fairview.

The Century Oil Refinery, at Lima, O., whose principal office is in New York city, was seized on an attachment amounting to $63.243, by John E. Borne, of Elizabeth, N. J., whose refinery was bought by the Standard Oil Company a year or so ago, and for this reason the Standard is thought to be behind the action. There are said to be other creditors. The company makes lubricating oil and parafine.

The remains of Union Furnace, near Dunbar, one of the oldest landmarks in western Pennsylvania, are being removed, and 200 coke ovens will be erected on the old site. The removal of this old furnace recalls the progress in iron manufacture during the past century. It was in December, 1795, that the records of this old furnace show that it made in one day the then large quantity of four tons of pig iron.

It is announced that Edwin Mickley, of Mickleys, Pa., a retired iron master and until recently superintendent of the ore mines of the Thomas Iron Company, has made an assignment for the benefit of creditors to Dr. E. G. Stemmetz, of Hokendaqua, Pa. The deed conveys 349 acres of farm and iron ore land in Lehigh and Berks Counties, Pennsylvania, valued at $100,000. The liabilities have not yet been made public.

The Guelph Norway Iron and Steel Company has begun operations in their new works at Guelph, Ontario The following are the officers: James Watt, president; J. E. McElderry, vice-president; James Naismith, secretary and treasurer; J. S. Patterson, mechanical superintendent. The other directors are Christian Kloepfer, A. R. Woodgatt and Frank Dowler. Mr. W. S. Patterson is the general manager. The works will produce bar iron, sheet iron, nails, etc. The material will be wrought scrap.

The Blast Furnacemen's Federation, of Sharon, Sharpsville and New Castle, Pa., has made the demand that from the first of next year 1½ days' pay shall be allowed for work performed on Sunday and

on legal holidays, except Fourth of July and Christmas; on which holidays they want double pay. Furnace officials refuse to consider the proposition, it being equal to a 15% advance. As the Mahoning Valley furnacemen are members of the federation, they will make a similar demand. If a strike results it will involve 5,000 men.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" of what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind, and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying or selling goods of any kind.

GENERAL MINING NEWS.

ALABAMA.

Shelby County.

Tennessee Coal, Iron and Railroad Company.—This company will within the next month start up three mines which have been idle since the great strike of 1894. The company for the last 60 days has been short from 200 to 500 tons of coal a day in its orders and is starting to work to increase its output.

The Gurnee mines are being pumped out, and as soon as all the water is out several hundred men will be put in at work.

ALASKA.

Alaska Treadwell Gold Mining Company.—The official accounts of this company for the first five months of its fiscal year, being up to October 31st, 1895, show the following results: Bullion sold ($3 68 per ton of ore), $427 197; interest received, $171.13; total receipts, $427,371.13. The expenses were: Mining, 116.290 tons at 48c., $56,335; milling, 116,290 tons and 1,992 tons concentrates at 29c., $33,254; chlorination, 1,998 tons treated at 11c., $13,162; general expenses, Douglas Island, 11c., $12,544; general expenses, San Francisco, 2c., $2,311; general expenses, London office, 1c., $985; bullion freights and charges, 5c., $5,597; construction, $151; total cost per ton, $1.07, or $124,342.55; net profit realized per ton, $2.61, or a total of $303,028.58. Profits from the store are not included in the above. The cost of roasting and chlorinating was $6.59 per ton of concentrates. The costs per ton are lower, and the profits greater than for any other similar period in the history of the company, which has earned in these five months more than its regular annual dividends.

ARIZONA.

Cochise County.

Mineral Hill Mining Company.—This company will hereafter ship to Bisbee all the ore taken from its mines instead of to Tucson. The force of men is to be increased from 35 to 125 and the output of ore increased to 40 tons per day. The ore will average from 12 to 14% copper, and it also carries some silver and gold.

Maricopa County.

Nicholson Gold Mining Company.—This company's property, situated about 40 miles north of Phœnix, has been worked since January, 1894. There is no mill or machinery on the property andno stoping has been done. About 2,000 linear ft. of development has been done. There are three tunnels now in ore. The first 370 ft. below the surface of the hill, the second, 100 ft. lower, is 817 ft.; the third,100 ft. below the second, is in 680 ft. The upper level is in a 100-ft. wide chute of low grade ore, with 5 ft. of $72 rock. The second level is in about 500 ft.and has 8 ft. of $40 rock. The third level is all in $40 ore, 8 ft. wide. There are about 2,000 tons of ore on the dump which will average $26 per ton. Some selected ore, averaging $50,was milled and returned $16,000. The tailings averaged $6.

CALIFORNIA.

Colorado Fuel and Iron Company.—President J. C. Osgood telegraphs from Denver: "I find our business looks well in all departments. The iron business continues good, and we are getting better prices than for the last two months, owing to freight rates from the East having been advanced. The commercial coal and coke business is better than it has been since 1892. The November tonnage was 15% ahead of last year."

Calaveras County.

(From an Occasional Correspondent.)

All the quartz mines on the Mother Lode, from Angels' Camp to the Stanislaus River south, are being worked with great activity. The Utica mines at Angels, are turning out their usual large yield of gold. The Bovee mine at Angels will soon be ready to start up its 10-stamp mill, which has been undergoing repairs; this mine years ago was a large producer of very rich rock, and good results are expected from it. The new 10-stamp mill at Bybee & Co.'s mine, on the southeast slope of Chaparral Hill, will be ready to start up in a few days. The prospects in that mine are flattering. On Carson Hill, three miles southeast of Angels, everything looks very encouraging for big developments. The Iron Rock mine is producing some good rock. At the South Carolina mine the tunnel is in over 250 ft. across the formation, and is expected to tap the vein soon.

Calaveras Consolidated Gold Mining Company.—At this company's mines, the work of retimbering their Big Tunnel is going on actively, under the management of the new superintendent, Mr. E. K. Stevenot.

Gold Hill.—The new addition of 10 stamps, making in all 20 stamps on this mine, at Smith Flat, 1½ miles west of Angels, will soon be ready to start up.

Melones Consolidated Gold Mining Company.—This company has reopened its lower tunnel at the Stanislaus mine and is going ahead with it. The chances are favorable for good developments. A number of years ago this mine produced some very rich rock.

Pure Quill.—The work on this mine at Smith Flat is being pushed ahead rapidly and is showing up some good ore.

El Dorado County.

(From Our Special Correspondent.)

Old Gray Mine.—This mine, three miles northwest from Shingle Springs, which has been abandoned since 1872, has been bonded by W. C. Hodgkin and J. Graham, of Chicago, who intend to clean out the old shaft and reopen the mine. This property produced over $100,000 between 1860 and 1872.

Lassen County.

(From Our Special Correspondent.)

Lone Pine.—This mine, at the foot of Diamond Mountain, 5 miles south of Susanville, has a strong and well defined vein which prospects were and extends into the heart of the mountain. The shaft is down 160 ft. and drifts are being run both ways on the ledge. A well equipped plant, consisting of a 50 H. P. engine, hoisting works, 10 stamp mill, etc., will be in working order in a few days.

Mariposa County.

(From Our Special Correspondent.)

Horseshoe.—This mine, formerly known as the "Eureka," four miles from Bear Valley, was abandoned many years ago on account of water. The present owners are down over 100 ft. and have drifted north 100 ft. and south 40 ft. The veins run from 2 to 5 ft. wide, the ore averaging $11 per ton. An engine and other machinery, including five additional stamps, will be put in at once. There are 14 men employed.

Nevada County.

Yellow Diamond.—All the water has been pumped out of this mine (formerly the Ragon) and Superintendent Jacobs will continue the development of the property on a large scale, says the Grass Valley "Tidings." They are now at the point in the shaft where very rich gravel was encountered just before they were forced to suspend operations by the flood of water.

(From Our Special Correspondent.)

Le Marque.—This mine is near Grass Valley. An incline shaft is down 300 ft. on a well defined ledge about 12 in. wide. The ore is rich in free gold and sulphurets.

Siskiyou County.

(From Our Special Correspondent.)

Mabel.—This mine is located 7 miles east of Scott's Bar. The vein, which courses east of north with a dip of 35° west between walls of porphyry, is about 18 in. wide. Over 300 ft. of tunnels have been run during the past year, 4 of them tapping the vein. The ore averages about $15 per ton.

White Rock.—This mine, an extension of the Mabel, has been bonded by J. H. Book.

COLORADO.

El Paso County—Cripple Creek.

(From Our Special Correspondent.)

C. O. D.—This mine, in Poverty Gulch, owned by the Rebecca Gold Mining Company of Paris, never looked as well as at present. The new ore shoot—to which reference was made last week—continues to improve; and at a point 75 ft. south of the old shoot the vein, three days in succession for 2 ft. wide, assayed 30 oz. of gold per ton. The rock is entirely unlike any rock before found in the mine not a particle of telluride, of free gold, or even of fluorite, which this mine has been noted for. The rock is a hard fine-grained quartz. Such discoveries tend to confirm a statement made some time ago in your paper, namely, that the producing area of Cripple Creek which is 4 miles from north to south, and 3 miles east to west, is but one tithe prospected. The new shaft 5×10 ft. in the clear, 10 in. square timber, has been sunk 225 ft. The rate of sinking with machine drills when running is 10 ft. a day. Everything about the new works speak of permanency.

Garfield Grouse.—This mine, on Bull Hill, also made a rich strike the past week, some of the richest ore found in camp. Seventy-seven men are employed in the sinking of two shafts and the driving of one drift, the property being worked under lease. The lessees have spent nearly $10,000 in the finding of the ore, but one month's work will put them even.

Rubrie.—This mine, on Bull Hill gives employment to 35 men, and ship about 10 cars of ore per day. The mine steadily improves.

Squaw Mountain Tunnel and Drainage Company.—This company has penetrated Squaw Mountain 1,260 ft. A drift has been extended south on one of the veins exposed 210 ft. and north for a distance of 170 ft. From this vein three cars of ore were shipped the past week.

Trachyte.—This mine, on Bull Hill, adjoining the Buena Vista and the Free Coinage group, has been steadily at work for seven months. The shaft has been sunk 120 ft. on a north and south vein, and drifts extended on an east and west vein 45 ft. The east drift yield assays from a small seam of talc on the wall from $300 to $3,000 per ton; the body of the rock from $5 to $12. The owners are confident that with a little more development the property is a dividend-payer.

Dolores County.

Enterprise Mining Company.—At Newark, N. J., on December 7th, Vice-Chancellor Emery was asked to appoint a receiver for this company. According to the New York "Times," John E. Ward appears as the complainant, but the application is being prosecuted by Hugh L. Cole, a stockholder of the company. The receiver is asked for on the ground that the company is insolvent and also on the ground of alleged mismanagement on the part of the directors of the company. It is stated in the bill filed that the company, from the time of its inception to June, 1893, paid large dividends. Since the latter month, however, no dividends were paid, and argument was raised by counsel for the company that legislation and the uncertainty of feeling about the currency question were the causes of the failure to pay. During the first hearing of the case the complainants practically abandoned the contention that the corporation was insolvent, and the fight is being carried on on the strength of assertions of mismanagement of the company's affairs. The bill filed states that there is a claim against Mr. George Crawford, until lately secretary and treasurer of the company, for $93,869, and against Mr. William McKay for $6,700. Mr. Crawford stated to a representative of the "Engineering and Mining Journal" that the allegations in the bill are false; that the company is perfectly solvent, and the charges of mismanagement are without any foundation. The suit, he said, had been brought by discontented stockholders, who represented less than 10% of the stock.

Lake County—Leadville.

(From our Special Correspondent.)

The last month of the year promises to prove one of the biggest producers of the year. The present output of the camp is nearly 1,400 tons a day, while a number of new shippers will be on the list before January 1st. These new shippers will be the Mikado, Turbot, Chip, Alps, Kohinoor, Cleveland, and Mike and Starr. For the past week there has been a scarcity of ore haulers, and mining men have been skirmishing for teams and teamsters.

Breece Iron Mine.—It is rumored that a strong syndicate of mining men has about completed arrangements to start up this big property. This ground has lain idle for a long time. There are good iron ore bodies exposed.

Cleveland Gold Mining Company.—The management started work on a new shaft this week, the old shaft being too small for operations. This old shaft is down 200 ft., and in a drift 160 ft. long a large body of silicious ore has been opened up. The new workings are to be connected with this big ore body.

Northern.—The good ore body caught in the 200 ft. drift was found to be dipping rapidly, and a new drift from the bottom has been started to catch it. The shaft has attained a depth of 540 ft.

Penrose.—Important development work is being carried on in the northern portion of this property. The intention is to develop the Gazelle ground, there being over 32 acres of this tract of land. A shaft was started on the Gazelle in 1893, but it fell through, and the territory will now be developed through the Penrose.

Smith-Moffat Group.—The output of this combination for November was as follows: Star, 750 tons carbonates; Bon Air, 115 tons carbonate; Maid of Erin, 1,675 tons carbonate; 49 tons iron; sulphide, 362 tons; Wolftone, 4,184 tons sulphide; Grey Eagle, 518 tons carbonate; 1,571 tons iron; 1,066 tons manganiferous iron.

Union Leasing and Mining Company.—A new shaft will be started by this consolidation that promises to prove of great importance, as it will develop considerable new ground. The new shaft will be located 2,500 ft. north of the El Paso, and the management feel confident that the ore bodies extend across the gulch into that territory. Machinery is already being placed in position to commence operations.

Union Smelter.—Manager Harp informed me when his plant closed down about two weeks ago that the Union Smelting Company would be reorganized and the plant be running very soon. This has proved true, and on December 7th an important meeting was held here at which Dr. B. S. Woods, president of the Bank of Commerce, of Kansas City, and William Wilson, a leading director of the same concern, joined hands with the Union people. As a result this smelter has again started up in full blast, and four stacks instead of two, as heretofore run, are to be kept going.

Mineral County.

Amethyst Mining Company.—This company, on Bachelor Mountain, has undertaken to show that Creede is a gold camp, through a deep mining pro-

cess, and has let a contract to sink a shaft 300 ft. below the 12th level. This enterprise has been undertaken because of the fact that on the surface little or no trace of gold was found, and every additional foot which has been sunk on the entire Bachelor Mountain has continually increased in gold-bearing ore, which has been illustrated in not only the Amethyst, but the Last Chance, New York Chance, Bachelor, Commodore, Happy Thought, and especially in the Park Regent, which is now turning out $15 to $20 gold ore, and in the Wicklow, on Monon Hill, of $9 ore, at a parallel altitude.

Bachelor Mountain, Tunnel County.—It is said that articles of incorporation have been prepared for this company, to operate in Mineral County, with D. H. Moffat as president. The company has its own tunnel and has leased the Manhattan tunnel lower down. About 400 ft. still lower down is the Nelson tunnel, and an arrangement has been made with the Nelson Tunnel Company to run a crosscut from their tunnel at some point to be determined, from 1,000 to 1,500 ft. from the mouth, paying the Nelson company a royalty for the use of the tunnel and working rights from the portion of the tunnel above the crosscut. From the departure on the Nelson tunnel to the vein is about 350 ft., and thence the tunnel will run on the vein in the neighborhood of 9,000 ft., through the following properties in the order named: The Bachelor, Archimedes, Commodore, the New York & Chance Mining Company, the Last Chance Mining & Milling Company, the Amethyst Mining Company, and the United Mines Company. The depth at which these properties will be tapped will vary from 1,000 to 1,400 ft., and a portion of the ground covered in some of the claims has already been worked out nearly to the line of the tunnel. The tunnel will therefore be used in these cases to take out the ore from the workings below the line, so long as it is profitable to work.

Creede.—According to the local papers the undeveloped portions of the camp, which have heretofore been practically unnoticed, are receiving the greatest amount of attention at present, which includes Monon hill on Sunnyside and Mammoth mountain; the later will have the Revenue tunnel made a shipper within a very short time, and a conference has been held at the office of the Nancy Hanks and Mary Anderson Mining company in Denver, for the purpose of determining whether the company will assume control of the developing work on their property, or let the same by contract, to drive the 1,000 ft. tunnel which they intend commencing immediately.

Holy Moses.—The lessees of this mine have already advertised for bids to drive a 1,100-ft. tunnel to cut the vein on the property, and John Knodel has let a 100-ft. contract to sink a shaft below the present workings of the Alpha lode on Monon Hill, in Sunnyside.

Ouray County.

(From Our Special Correspondent.)

Abendigo.—Three men started development work at this property this week after an idleness of over two years. The Abendigo was formerly a heavy silver producer.

American Nettie.—The company has five men contracting on development work and three men taking out ore which is of very high grade.

Black Iron.—Manager Fred Hochuli arrived from Telluride recently, and is preparing to resume work at this property on an extensive scale. A good cash offer was refused for this property a few days ago.

Caroline.—The new mill has been completed and the machinery is now almost in working order.

Cow Creek.—A company has recently taken hold of several claims in this new gold district and will push things during the winter. Several men are at work building a road to the mines. The Cow Creek district is supposed to be an extension of the Ouray gold belt.

Doktor-Jessie.—A small force has been put on at these properties and will thoroughly develop the ground during the winter.

Khedive.—Eight men are working at this point. The tunnel is in 100 ft.

Polar Bear.—Geo. L. Wright this week sold to Geo. R. Hurlburt, the Polar Bear, Grizzly Cub and Little Bear lodes, for a consideration of $50,000.

Silver Queen.—W. H. Fourrell sold to H.M. Kelly, this week, a half interest in the Silver Queen, Ophir and Mono claims for $6,000.

Wedge.—The shaft is now down 200 ft. and drifting will now begin, with the expectation of catching an extension of the Bachelor vein.

Pitkin County.

Aspen Mountain Tunnel and Drainage Company.—This company continues to drive its tunnel toward Tourtelotte Park. The tunnel will tap the silver deposits known to exist in the company's patented ground in the park. The work is leased to the Aspen Mesa & Mining Company. The tunnel is now in 1,010 ft., and the contract calls for a total of 3,500 ft. This distance will bring the company's properties into access through the tunnel, at a depth of 430 ft. from the surface. Quite a force of men is at work on the driving, and it will be increased later. The directors of the company, chosen two weeks ago, have elected the following officers: Walter S. Clark, president; Alonzo F Bardwell, vice-president; N. L. Rice, treasurer and trustee; John McNeill, secretary and superintendent.

GEORGIA.

Lumpkin County.

A deposit of pyrites, near Dahlonega, is to be opened up by George J. Baldwin, who now owns the property.

Murray County.

Legal Tender Silver Mine.—This property at Fort Mountain has been sold to parties from Nashville, Tenn., and Chicago, who will, it is said, spend some money in developing the mine.

IDAHO.

Ada County.

Black Hornet.—It is reported that Capt. J. W. Plummer has bought the Black Hornet mines, 11 miles from Boise City, the stated price being $100,000. The mines are now in operation and a carload of ore averaging, it is said, $40 per ton, is being shipped to Salt Lake daily.

Boise County.

Buffalo.—Charles and F. H. Cooper have resumed work in this mine. They are extending the tunnel started two years ago to the ore chute.

Lucky Boy.—Two teams are at work hauling 50 tons of ore from the Lucky Boy mine to the Blaine mill, which will commence crushing at once. The Boulder mill is running 10 stamps steadily.

Summit.—A Denver company is pumping the water out of the Summit mine with a view of purchasing it. Should it look favorable, they will sink to the depth of 200 ft. and crosscut.

Lemhi County.

Easter.—Judge Richards has discharged Receiver Warner, of the Easter mine, in the Willow Creek district, and Mr. Levan has been placed in possession again. This is a matter of importance to the district and to Boise City, says the "Statesman." The mine brought the district into prominence, and its closing under the legal proceedings was a serious blow to the camp. At the time the property was shut down some rich ore was being mined.

Owyhee County.

De Lamar Mining Company.—The monthly report of the superintendent for October gives the usual notice of prospecting work done. There was found in the Stoddard shaft, some time ago, a branch of quartz that assayed gold $2, and silver $134.40, total $136.40; and a branch of talcose ore that assayed gold $2, and silver $117.90, total $119.90. Present explorations in the Stoddard claim are in search of the easterly continuation of these branches spoken of above. We find some ore but not of as high a value; the ground, however, looks promising. The statement of work done by the mill shows: Tons crushed (wet), 3,825·93; tons crushed (dry), 3,443·24; assay value of the pulp, $25.13; gold, $19.36; silver, $5.77; assay value of the tailings, $5 06; gold, $4.18; silver, 88c.; percentage saved, total, 79·87%; dore bars produced, 20; number of ounces pure gold produced, 2,153; number of ounces fine silver produced, 31,837; value of gold produced, $43,072; value of silver produced, $19,102; ore shipped during the month, $8,500; surplus on sales of bullion, $8,151, miscellaneous revenue, $841; $79,667. Deduct all expenses for the month, $41,760; estimated profit for month, $37,907. The construction work on the new plant for the Pelatan-Clerici process during the month has been pushed with all despatch. A building 80 ft. long, 34 ft. high, and 56 ft. wide, has been erected over the plant. The heavy framework (built of 12 × 12 stuff) has been built, and the erection of the brick walls of the tank has been commenced. The mortar blocks have been built and put in place.

Pauper.—Work will be resumed at once on this mine, on War Eagle Mountain, upon which Crutcher Bros. have a bond. The Pauper is one of the old-time bonanzas of War Eagle, which shut down in 1875, and was allowed to fill. The ore extracted was rich. The early work was done through a shaft, and the vein being very wet it required 18 hours out of the 24 to keep the water out. Just before the closing of the property a tunnel was started in the Silver Cord gulch to tap the property. This tunnel is in something over 300 ft., and we learn from Superintendent Crutcher that it will be retimbered at once and contracts let to push it under the old works, a distance of 500 or 600 ft. It will run about 75 ft. below the old shaft.

Shoshone County.

Morning.—This mine, at Mullan, has started up one half of the mill, there being sufficient water for that purpose. The engine and boilers are now about ready for firing up, but the mill cannot be started full blast until some steel rolls arrive which were ordered some time ago.

ILLINOIS.

The coal operators of what is termed the northwestern field held a meeting in Peoria last week. Nearly all the mines along the Toledo, Peoria & Western, the Iowa Central, and the Burlington were represented. A permanent organization was effected and officers were chosen. All those present agreed to maintain prices and regulate the output.

KENTUCKY.

Johnson County.

Captain F. A. Stacey, of Chillicothe, O., and J. P. Deiter, of Chicago, Ill., have purchased of J. S. Rittenhouse and Mrs. H. C. Gilman, 10,000 acres of cannel coal lands, lying on Greasy Creek. The price paid was $25 per acre.

MICHIGAN.

The Michigan Miners' Union held an important meeting at Iron Mountain this week. The union was born at Ishpeming during the strike of last summer and now has a strong foothold in the Marquette, Menominee and Gogebic iron ranges. The union passed strong resolutions condemning the present system of mine inspection, the aid clubs and the company doctors and hospital.

Copper.

Centennial Mining Company.—Up to the present time the reorganization committee of this company has received in assessments $63,000. There has been underwritten $24,000, and if the assessment is received on the Hoyt stock, 19,000 shares, as expected, the committee will come within $10,000 of meeting the requirements. At the recent hearing before the Michigan court the petitioners showed that there was no proviso in the bonds authorizing the sale of the whole property to satisfy judgment, although such a provision was in the original agreement. It is believed that only so much of the property can be sold as is absolutely necessary to pay existing claims. The committee, it is reported, is confident of being able to raise the money needed.

Franklin Mining Company.—The Pewabic shaft of the Franklin, Jr., mine is now down about 250 ft., not 450 ft., as reported. A few patches of copper has been found, but the Franklin management does not expect to find anything until the shaft is down 400 ft. It is in the Pewabic shaft that a good strike is expected rather than on the crosscut to the Calumet conglomerate, says an exchange. The crosscut has to date been driven about 1,600 ft., a couple of hundred feet beyond the point where the management of the old Peninsular mine thought it had located the Calumet vein.

Iron—Marquette Range.

Champion Iron Company.—The new crusher which is to be installed at the Champion mine has several features in which it differs from those previously in use at hard ore mines on Lake Superior, says the "Marine Review." The pitman is of steel, instead of iron, as heretofore, and weighs 7,600 lbs. An oil well is provided, in which the eccentric shaft is allowed to come into direct contact with the oil, practically running in it. This overcomes the excessive friction. Another novelty is the hole left in the body of the pitman, large enough to permit a man to reach through, and admitting of examination of the front toggles. This overcomes the difficulty experienced in all the larger machines of this class, on account of the jaw and pitman being so close together as to make it impossible to get in between them. The hole also serves the other purpose of relieving the pitman of some of its weight. This was possible in using steel instead of iron. The company is now putting up a new permanent crushing plant, consisting of three crushers, set side by side directly over the railroad track. These will be run by manilla rope transmission from corresponding pulleys 10 ft. in diameter on the crushers and engine shaft, and driven by a pair of Corliss engines. The plant is centrally located 300 ft. from the boilers, which furnish the steam for the whole mining plant. The ore from the different shafts will be run by gravity direct from the skips to the crushers and from them will be conveyed to the stock-pile floors in winter, but in summer will fall directly into the railroad cars, which in turn are moved by gravity. The whole arrangement is made with a view to economizing as much as possible the cost of reducing the ores of this mine to a size found to be most desirable to furnacemen. Thus reduced, this ore is found to make a desirable mixture with the finer ores of other ranges. The new crusher weighs 55 tons. The opening is 24 in. × 24 in. Sectional area of each side, 660 in.

Lake Superior & Ishpeming Railway Company.—According to our exchanges, the officials of the Cleveland-Cliffs and Lake Angeline mining companies no longer seek to cover up their connection with the new Lake Superior & Ishpeming Railway Company, which has begun the construction of a railway from Ishpeming to a point on Lake Superior just above Marquette. The mining companies are said to be the principal purchasers of the bonds of the railway company. They expect to furnish a great deal of business to the new railway. It is expected that the railway, which will have about 15 miles of main line, touching Lake Superior at Presque Isle, just above Marquette, will be finished about June 15th next. Winston Bros., of Minneapolis, Minn., have the contract for constructing the line.

Iron—Menominee Range.

The mining companies of Ishpeming and Negaunee have notified their employees that the wages of miners has been increased 10c. and laborers 5c. per day, making the miners' scale $1.80. The advance was a surprise to the men. It is reported that members of the union say the non-union men will now be asked to join the union, and in case they refuse the union miners will be called out of the mines. In this event the managers say they will close down the mines for the winter rather than recognize the union.

Dessau Mining Company.—This company, successor to the Millie Mining Company, has filed articles of incorporation in Michigan. The capital stock is $25,000, and the directors are Simon Dessau, S. A. Dessau, John R. Rogers and Charles McGregor.

MISSOURI.

Jasper County.—Joplin District.

(From Our Special Correspondent.)

There was a light output of ore last week and also a lighter turn in the buyers of zinc ore forced prices down until the top price was $22 per ton and the average was a little less than $20 per ton. The price paid for lead ore was $17 per 1,000 lbs. being a little more than last week. The output was light on account of the cold weather the first part of the week, and a number of the operators held their ores for better prices. The turn in for the past week is as follows: Joplin, zinc, 569,970 lbs.; lead, 163,270 lbs.; value, $7,657. Webb City, zinc, 701,240 lbs.; lead, 43,790 lbs.; value, $8,161. Carterville, zinc, 1,118,900 lbs.; lead, 197,090 lbs.; value, $15,197. Galena, Kas., zinc, 1,589,000 lbs.; lead, 375,000 lbs.; value, $20,820. Spring City, zinc, 8,970 lbs.; lead, 7,360 lbs.; value, $220. Stotts City, zinc, 128,000 lbs.; value, $1,280. Alba, zinc, 84 000 lbs.; value, $880. Total district, value exclusive of Aurora, not reported, $55,195.

Get There.—The Phœnix Company on the Get There lease are building a new steam jig plant and expect to start up in a couple of weeks. They are drifting at 150 ft. on an 8 × 50 ft. face of lead and jack in hard ground.

Pinkard.—Allen & Cragun on the Harrison & James lease on the Pinkard land, have built a new steam jig plant and it has been running about a week and gives satisfaction. The plant has a capacity of 350 tubs of dirt every 10 hours and is making over 6 tons of jack, or zinc ore every 10 hours. It is a new style, being a 6-cell jig built in a line doing away with two elevating shafts and being cheaper and simpler in construction.

South Forty.—Norsworthy & Co., on the South Forty, are building a new steam jig plant similar to Allan & Cragun's and expect to have in operation by next week. They have a large face of jack and lead in soft ground. They have been concentrating their ore on hand jigs.

Tenderfoot.—This mine plant and lease was bought last week by Mr. Schumway for the Chatterawawa Mining Company and will be in operation next week. They bought the steam jig plant and paid the back royalty of $2,375. This mine has been one of the largest lead producers in the district, having made an output in one week of 138,000 lbs. of lead ore. The water is very strong requiring two 12-in. force pumps running day and night. They have a good run of jack at 196 ft. in open ground.

MONTANA.

Deer Lodge County.

(From Our Special Correspondent.)

Copper.—During the past few weeks there has been a good deal of excitement on the Big Blackfoot over copper discoveries. H. L. Frank, of Butte, has a bond on two 12 miles from Bearmouth and has let a contract to sink a shaft 100 ft. He claims that on one of these properties at a depth of 35 ft. there is a 4-ft. ledge of ore which will give an average assay of 18% copper.

Madison County.

(From Our Special Corespondent.)

Copper Discoveries.—It is claimed that several large and rich copper veins have been discovered in the range between the Beaverhead and Ruby rivers, east of Dillon, running 12 and 30% copper. Butte and Helena parties have them bonded.

Red Bluffs.—F. J. Bennett, of this property, is in Butte for the purpose of purchasing larger machinery. He told the "Inter-Mountain" that he bonded the property for $45,000 last spring and struck ore about a month ago. Since then the ore body has widened out to 13 ft., 4 ft. of which is steel galena, which will assay over $100 to the ton. This strike was made at a depth of 165 ft., and Mr. Bennett is now making arrangements to put in machinery to sink another 100 ft. Shipments of ore are being regularly made to the East Helena smelter, the total cost of treatment and freight not exceeding $12 per ton. Mr. Bennett will make arrangements for the building of a mill near the mine next spring.

Meagher County.

(From Our Special Correspondent.)

The crosscut in the Anaconda at Johannesburg or Jayville, five miles north of Neihart, has proceeded 35 ft. and no footwall has been struck.

Broadwater.—A station has been cut in the lower tunnel of the Broadwater and an upraise commenced to connect with the shaft which has been sinking from the second tunnel for some time. Sinking on this shaft has also been begun again. It was discontinued in order that the upraise might be started. The ore shipments of the property show a slight increase already, and a few more men are at work than there has been for some time.

Florence.—This company, at Neihart, have just completed sinking to the 300-ft level, have made a crosscut and struck a fine body of ore. They are now cutting out a station, and as soon as it is completed will start drifts north and south.

Galt.—This management has resumed sinking. The water is out of the shaft as far as the 100 ft. level and stoping from there is going on. There are not many men employed at present, but soon the force will be increased. With those at work taking out ore and others extending the Queen tunnel under the Galt shaft that company will have quite a force at work. Hauling ore for shipment began last week.

Park County.

(From Our Special Correspondent.)

Livingston.—Machinery has been shipped from Butte to Livingston by H. L. Frank to develop a coal property, three-quarters of a mile from that town. An incline shaft will be run to the 300 on a 9-ft. vein which promises big results.

Silver Bow County.

(From Our Special Correspondent.)

Boston & Montana.—An experiment made at the smelter at Great Falls proved that the refiners could greatly increase its capacity. The details of the experiment have not been given out, but the company has decided to enlarge its power house, put in more turbine wheels to operate two large dynamos that have been ordered. In doing this the Boston & Montana Company is pursuing a policy directly contrary to that of Mr. Thofehrn, the able superintendent of the Anaconda refinery. He uses a large tank capacity with a low voltage; the Boston & Montana Company will use a small tank capacity with a high voltage.

Butte & Boston.—It is stated that Capt. Thos. Couch, after looking over the properties of the Butte & Boston Company, of which he became superintendent November 1st, found that ore had been broken in advance of what the developments warranted and changed part of his force to development work. The injunction of the Anaconda Company against the Butte & Boston will further lessen the output of this company's properties.

Green Mountain.—The mammoth engine at the Green Mountain mine was started up November 30th, under the supervision of Mr. Dwyer, of the Webster, Camp & Lane Company, of Akron, O. This hoist is the largest of any in the West and is easily able to lift from a distance of 5,000 ft.

Wild Bill.—In the suit of the Anaconda Copper Mining Company to restrain the Butte & Boston Mining Company from taking ore from under the surface of the Wild Bill claim was completed at Butte on December 2d. Judge Speer, at the conclusion of the arguments, said the testimony went to show that there was reasonable ground for believing the apex of the lode being worked was within the Wild Bill claim. Only 200 ft. or so of the vein was in dispute, and the defendant had the right to work the Gray Rock outside of this disputed ground. The matter in dispute was not definitely determined as yet, and there would be no great loss, as the ore vein would still remain and be there when the case was finally decided. To allow the defendant to go ahead and take out the ore and account for it to the plaintiff would not be satisfactory to the plaintiff. He granted the preliminary injunction, but required the Anaconda Mining Company to furnish a $25,000 bond to indemnify the defendant against loss. If it should be shown at any time before the case was finally decided that this bond was not large enough he would order it increased. The defense took an exception, and 10 days were granted in which to prepare a bill of exceptions. The Butte & Boston people claim that the veins of the Wild Bill and Gray Rock claims form a junction some distance below the surface, says the Butte "Miner." Under the law, if this can be shown, the owners of the claim first located have the right to the ore below the junction. In this case the Gray Rock is the older location of the two.

NEVADA.

Lincoln County.

De Lamar.—A heavy shipment of gold bullion from this property was made last week. Mr. Ralph Nichols, superintendent of the mine reports that the mill is now operating at full capacity, and working 110 tons of high-grade ore a day.

Storey County.—Brunswick Lode.

The latest weekly official letter says: Shaft No. 1, on Hale & Norcross ground near the Chollar north boundary, has been sunk a distance of 15 ft. on the incline passing through quartz showing some value; total depth, 211 ft. Shaft No. 2, on the boundary of Con. California and Virginia and Best & Belcher, has been sunk 13 ft. on the incline, passing through hard porphyry; total depth, 147 ft. We expect to have an air connection made with an old tunnel east of this shaft next week. East crosscut No. 1, in Savage tunnel, which was started at a point 400 ft. from the mouth of the tunnel, has been extended 28 ft. passing through soft porphyry and clay; total length, 107 ft.

Storey County—Comstock Lode.

Following are extracts from the latest weekly official letters of the mine superintendents:

Alpha.—We have started a raise in the quartz in the southwest drift from the west crosscut on the 450-ft. level, and carried the same up 7 ft. through quartz which assays from $5 to $20 per ton in gold. The top of the raise is in quartz.

Belcher.—On the 300-ft. level the joint Belcher and Seg. Belcher west crosscut from the south lateral drift is out 174 ft. The face shows clay and porphyry. There were hoisted during the week 38 tons of Belcher ore, the average car sample assay of which was $23 86 per ton.

Chollar.—The yield was 78 tons of ore, which came from the fifth and sixth floors of 450 level stope. This ore was sent to the mill. The average battery assay was $28.60 per ton.

Confidence.—The west crosscut No. 1 from the surface tunnel is out 338 ft. The face shows porphyry. There have been extracted during the week 20 tons of ore, the average car sample assay of which was $21.48 per ton.

Crown Point.—Work was resumed in the stopes on December 1st, since which time, up to December 3d, we shipped to the Mexican mill 458 tons and 1,940 lbs. of gold ore, the average battery assay of which was $11.31 per ton, of which $10.08 was gold. There is no change in the stopes.

Hale & Norcross.—On the 975-ft. level, the ore streak in the stopes has become narrower, and have stopped work in the winze below that level, the pay streak having pinched out.

Ophir.—On the 1,000-ft. level the recently started north and south drifts are out 44 and 62 ft. respectively in a porphyry formation. The face of the south drift is showing some clay. In the central tunnel workings of the Ophir on the 250-ft. level, a north drift from the west crosscut from northeast drift No. 3 has been advanced 14 ft. through old ground and timbers, the face being in quartz assaying $5 per ton. We saved from this locality during the week 8 tons of ore assaying $25 per ton. No changes are reported in the other openings in the central tunnel region.

Overman.—The yield of the mine was 13 tons and 800 lbs. of ore, the average mine car assay of which was $22 per ton. For the month of November the yield of the mine was 51 tons and 1,850 lbs. of ore, the average car assay of which was $49.64 per ton. All this ore came from the north drift of the 900-ft. level.

Potosi.—The ore output of the mine was 213 tons, which was shipped to the mill. The average battery assay was $26.69 per ton. Bullion valued at $7,196.79 was shipped to San Francisco. On the twelfth floor of the 550-ft. level stope they are following a streak of ore, 4 ft. wide, just east of the old timbers in the west ledge.

Segregated Belcher.—There were hoisted 12 tons of ore, the average car sample assay of which was $25.80 per ton.

NEW YORK.

Putnam County.

Tilly Foster Mines.—State Factory Inspector Connolly has notified Clinton Stephens, as the contractor and operator of the Tilly Foster Mines, in Putnam County, and the Lackawanna Iron and Steel Company, of New York City, to remove the dangerous sliver of gneiss rock on the west side of the foot wall in the opening to the Tilly Foster mine and all boulders and loose rock on the northwest side of the opening and 150 ft. from the surface on the northwest corner of the mine, also the dangerous portion of hanging wall on the east side of the mine, about 150 ft. from the surface, in which fissures have recently opened. The ⅝ in., hoisting cables on skips and carriages have been ordered changed to 1-in. steel cables. A steam gauge must also be attacked to the steam pipe in the engine house, so that it will at all times be readily visible to the engineer and fireman. This order was made as a result of the investigation of the mine properties made by a deputy factory inspector. The factory inspector has ordered that all mining operations shall cease until the order is compiled with, and will begin criminal proceedings if its provisions are not carried out within 60 days.

NORTH CAROLINA.

Montgomery County.

(From Our Special Correspondent.)

Glen Brook Mines.—The owners have practically completed their cyanide plant, which will have a capacity of 20 tons per day.

Sam Christian Gold Mine.—Tributers at this mine are paying their way along now that the rains have set in. Several good nuggets, together with several hundred dollars in fine gold, were reported two weeks ago as being on hand.

Rowan County.

(From Our Special Correspondent.)

Gold Hill.—The 10-stamp mill is kept in operation three days per week on ore from the old dumps.

Graff Gold Mine.—Some of the owners of this property from Newark, N. J., have visited the property and made a trial run on the ores, which is reported as satisfactory, and it is reported they will resume operations.

Stanly County.

(From Our Special Correspondent.)

Crawford Gold Mine.—This mine is in operation, producing a small amount every week. It is reported that the owners will resume operations on a larger scale in the spring. This mine is reported as paying its way ever since it started.

Parker Gold Mine.—The main shaft is sinking, and is down 140 ft. A quartz vein has come into the shaft, and is showing some gold. This is considered encouraging, as it is the first vein holding down into the hard country rock.

OHIO.

A committee of the Ohio coal operators has declined to grant the demand of the miners for 60c.

per ton for mining where company stores are operated.

PENNSYLVANIA.

Anthracite Coal.

Mine Inspector Roderick's report of mine accidents for November in the Fifth (Hazleton) Anthracite District is as follows: Fatal, 3; non-fatal, 12. This report shows a decrease over other months in the year. The report of Mine Inspector Blewitt, of Scranton, shows 31 accidents during November. Three of these were fatal. Mine Inspector McDonald, of the Pittston District, reports 22 accidents for November, 5 of which were fatal.

Primrose.—This colliery, owned and operated by the Lehigh Valley Coal Company, resumed operations on December 9th, giving employment to 800 men and boys. The colliery had been idle for one year.

Bituminous Coal.

The H. C. Frick Coke Company has bought from Samuel Hunter 190 acres of coal land in Unity township, Westmoreland County, for $90,000.

The house coal miners' strike at Johnstown ended last week by the operators granting the 10c. a ton increase asked. The men now get 75c. per ton instead of 65c.

A press dispatch from Pittsburg says that the railroad coal miners and operators of the Pittsburg district, after spending three days in debate the two parties in joint convention, on December 5th, agreed that unless the New York & Cleveland Gas Coal Company comes up to the district price, the entire district make its price the same as that paid by the above company. This means that unless the New York & Cleveland Company will pay as much as every other operator in the district now stands ready to pay, the miners to the number of 10,000 will voluntarily accept lower wages in order to "smoke out" the offending concern by giving their employers the same chance of competition as it possesses. The report of the Scale Committee was adopted with a rush, and embodies the following conditions: "The mining price for coal over a 1½-in. screen shall be 64c. a ton from January 1st to April 1st, 1896; for the rest of the year 70c. a ton. Day and dead work shall be paid for as at present."

The contract is contingent on the following conditions, to which both sides assented: That all company stores shall be abolished by January 1st, as agreed upon in the joint convention of last October, and that no mine official or operator shall directly or indirectly be connected with a store or shall deduct anything from the wages of miners in the interests of any store-keeper. Operators doing the latter shall be regarded as conducting a company store, and shall pay 20c. per ton more for their mining than the regular price. There shall be no limit to the amount of coal a miner may load on a pit wagon. Screens shall not exceed 60 superficial feet and the meshes shall not be more than 1½ in. square. Operators shall recognize the right of miners to place on tipples check-weighmen of their own election. "A standing committee of five miners and five operators shall arbitrate differences that may arise. This committee shall meet before January 15, next. If it finds that all these conditions are complied with and that the New York and Cleveland Gas Coal Company is paying 64c. a ton, the agreement stands. If the company named is not paying that price then the miners shall accept as the district price whatever rate the New York and Cleveland Gas Coal Company is paying. Miners are to be paid twice each month."

SOUTH DAKOTA.

Lawrence County.

Bottleson.—Work has recently been resumed upon the Bottleson shaft, which has been idle for several weeks. The men are now in the ore zone, and it is thought that pay rock will be reached before long.

Deadwood & Delaware.—The smelter will be lighted with electricity soon. A dynamo has been put in, power to be furnished by the smelter engine to operate it. One hundred lights will be put in.

Lackawanna.—A force of men is at work crosscutting and breaking ore upon the Lackawanna, and there is a large quantity of high-grade ore upon the dump. The owners contemplate resuming shipments shortly.

Portland.—The cyanide works deposited in the First National Bank, on December 2d, a gold brick weighing a trifle less than 125 lbs., and valued at about $30,000, says the Deadwood "Pioneer." The brick is the result of 15 days' run on ore almost wholly from the Portland Mining Company's ground. Taking the amount of ore treated daily as a basis, this would give about $40 per ton.

Yankee Boy Mining Company.—The annual meeting of this company was held in Deadwood last week, and the following officers and directors were elected: Julius Rebsamen, president; John McLaughlin, vice-president; John Baggaley, secretary and treasurer; David Laird and W. H. Bonham, directors. The superintendent reported that during the past year two tunnels, 50 ft. each, and one tunnel 174 ft. and a crosscut 18 ft. had been run on the ground, and all in ore. Stringers of high grade ore had been found, but the general average is only about $8 per ton. The work has been paid for from the proceeds of sale of treasury stock and assessment No. 1. The property consists of 20 claims located about half way between Garden City and the Iron Hill mine. The ore is silicious.

Pennington County.

Holy Terror Mining Company.—This company has been incorporated at Pierre, with a capital stock of $300,000, in shares of $1 each. The incorporators are John S. George and Charles M. Kipp, of Milwaukee, Wis., and John J. Fayee, of Keystone.

Milwaukee Mining & Milling Company.—Articles of incorporation of this company, with a capital stock of $100,000, at $1 a share, have been filed at Pierre. The principal places of business are at Milwaukee, Wis., and Keystone. The incorporators are John S. George and Charles M. Kipp, of Milwaukee, and John J. Fayee, of Keystone.

UTAH.

Salt Lake County.

Niagara Mining Company.—The tunnel at Bingham has now penetrated the hill for a distance of 2,850 ft., where it has cut through the foot-wall and is driving westward on the vein. The draining of the mine, however, which it is intended shall be accomplished through this tunnel will not begin until the porphyry dyke that stands vertically in the hill has been passed and the waters tapped on the other side.

WASHINGTON.

Stevens County.

Bonanza and Young America.—The starting up of work on these mines means much to the mining interests of that section. The Young America has in the past shipped some high grade ore and concentrates, the former running 100 oz. in silver and upward. A few years ago the concentrator was sold and taken to the Number One Mine at Ainsworth, B. C. The Bonanza is a well developed property, and with former workings has shipped a large quantity of ore.

Columbia Placer Mining Company.—Mr. A. P. Curry, President of this company, which owns 800 acres of rich bars in the vicinity of Boundary, is now on the property with a view of starting up work, if satisfactory arrangements can be made.

Deep Creek.—There is some activity on Deep Creek iron claims and there have been one or two sales.

WEST VIRGINIA.

A deal was effected at Baltimore this week by which the Monongahela River Railroad Company and the Monongahela Coal and Coke Company are merged into one. The railroad belongs to the Camden system, in which some Baltimore & Ohio stockholders are largely interested. The property acquired takes in 15,000 acres of coal land in Marion and Harrison counties. The Monongahela River road joins the towns of Fairmount and Clarksburg, and is about 37 miles long.

WYOMING.

Albany County.

(From our Special Correspondent.)

Albany Placer Company.—This company, composed of Laramie people, owns an extension of gold placer at the head of Douglas Creek. During the last four months the company has employed a large force of men in opening the property. The ditches have been constructed, a pen stock is in and a bedrock flume completed ready for work in early spring.

Albian.—Recently a force of men was put at work on their claim, near Cooper Hill. This property has some very rich ore. The galena carries as high as 350 oz. of silver, and mill returns from the vein have averaged about $100 per ton.

Laramie Plaster Company.—This new organization has surveyed a place for the plant and work upon construction will commence at once. The company will spend $50,000 upon the plant and expect to employ 30 or 40 men. This is one of the new industries to be added to Laramie and will be one of great importance. They will manufacture all grades of plaster and have arranged with the railroad to reach the principal western markets.

Little Ella.—This gold property in Cooper Hill district has closed down for the winter. The water was so bad that with the present plant economical work could not be carried on and it was too late to put in a new plant. The property looks well, the ore being a copper and iron pyrites carrying gold.

Spring Creek & Richie Company.—This company, located lower down on Douglas Creek, also has everything in readiness for early work.

Natrona County.

(From Our Special Correspondent.)

Oil Wells.—Although severe winter weather has set in, the oil men are actively engaged in development. Besides the six producing wells of the Pennsylvania Oil Company, the Wyoming Lubricating Company and the French syndicate also have put in well drilling machinery. They are located in favored positions and two new wells may be announced any day.

LATE NEWS.

William A. Camp, for 28 years manager of the Clearing House of the Associated Banks of New York, died December 10th. For many years Mr. Camp had been a prominent figure in the financial world, where he was universally esteemed. He was born in Durham, Conn., in 1822. After an academic education he entered mercantile business in this city. In 1857 he was appointed assistant manager of the Clearing House. He was elected manager in 1864, and this position he retained until July, 1892, when he retired from active business life, being succeeded in the Clearing House by the present manager, William Sherer. To Mr. Camp was largely due the efficient working of the Clearing House system in New York.

Mr. Frank L. Underwood moved before Justice Andrews, of the Supreme Court, on Monday, to make permanent a temporary injunction he secured to prevent William Bayly and Alvah Adams, ex-Governor of Colorado, from voting on 4,491 shares of stock of the Tomboy Gold Mines Company, of Telluride, Colo. The company was incorporated about a year ago in West Virginia. There were 200,000 shares of stock at $10. One of the counsel said that the company has recently been turning out between $60,000 and $70,000 in ore a month.

Mr. Underwood, who is president of the company, alleges that a conspiracy was formed to oust him from control at the meeting set for December 9th, before which he had obtained his temporary injunction. The 4,491 shares of stock involved stand in the name of Bayly. He and Adams are trustees. Plaintiff says that he deposited the stock with Bayly to secure a note for $14,716 which he had given to Adams, that he has offered to take up the note, but that Bayly will not give up the stock. Mr. Underwood says that he holds in all 12,900 shares of the stock; his wife 61,000; his daughters 3,000, and his friends, who will give him proxies, hold enough to make him control 89,000 shares. Judge Andrews granted the motion on December 12th, and the injunction was made permanent.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Dec. 13.

PRODUCTION OF BITUMINOUS COAL, in tons of 2,240 lbs., for week ending Dec. 7th, and year from January 1st:

Shipped East and North:	1895. Week.	1895. Year.	1894. Year.
Allegheny, Pa.	39 975	3,083,265	1,183,245
Barclay, Pa.	1,000	42,900	$.....
Beech Creek, Pa.	65 200	2,279,350	2,200,937
Broad Top, Pa.	$	$	348,609
Clearfield, Pa.	103,525	5,449,667	2,559,082
Cumberland, Md	74,790	3,146,839	$ ....
Kanawha, W. Va.	$ ..	$.....	2,557,122
Phila. & Erie	1,100	55,860	72,153
Pocahontas Flat	†70,175	†2,601,650	3,263,858
Totals	355,765	16,662,531	12,184,986

† Week ending Nov. 23d. $ Returns not received.

Shipped West:	1895. Week.	1895. Year.	1894. Year.
Monongahela, Pa.	17,000	829,211	624,794
Pittsburg, Pa	38,750	1,774,676	1,391,202
Westmoreland, Pa.	42,775	1,840,049	1,545,319
Totals	98,525	4,443,936	3,561,315
Grand totals	379,500	17,959,628	15,746,301

Production of coke on line of Pennsylvania Railroad for the week ending Dec. 7th, 1895, and year from January 1st, in tons of 2,000 lbs.: Week, 146,789 tons; year, 5,567,577; to corresponding date in 1894, 3,358,813 tons.

Anthracite.

There is no change to report of the anthracite coal trade so far as actual market conditions are concerned. In this vicinity there is still much dullness and prices continue weak. The weather of the past few days has been excellent for sellers, and doubtless a great deal of coal has been used, but, of course the wholesale trade has not been affected by it yet. Dealers here have had very fair stocks and, we understand also quite an amount of coal to be delivered on old orders, so that the demand has continued very light. Prices are without noteworthy change from last week and we quote the following: Stove, $3.50@$3.60; chestnut, $3.35@3.45; egg, $3.25@$3.35; broken, $3, all net, on board.

A movement is on foot to reach some understanding in the matter of restriction of the output, and the matter has been discussed informally this week among the officials of the various companies. In the absence of fixes percentages, the only way of restricting is by closing down entirely for a certain number of days, and it has been suggested that the collieries suspend three days a week for the balance of the month. Another plan, we understand, contemplates closing down from December 21st until after the New Year's holiday. Nothing definite has been agreed upon as yet, and no formal meeting has been held. It is an encouraging fact, however, that the majority admits that the restriction of the output would be wise. A scarcity of coal in Chicago is reported, and those interests which have a good market there profess a desire to ship coal to that point by rail at present, especially as the railroads are now offering a good car supply, and freight rates will advance 50c. a ton after January 6th.

At this writing it seems likely that some attempt at restricting will be made. Several of the companies have considerable unsold coal on hand, which, if unrestricted production is persisted in, will be a menace to prices. With the good coal consuming weather of the past fortnight and a moderate output there is no reason why prices should not become, if not higher, at least firmer.

NOTES OF THE WEEK.

The freight agents of the anthracite coal railroads have ordered an advance from $3.50 to $4 per ton in the rate for carrying coal from the mines to markets west of Buffalo and Salamanca. The advance applies to all rail business.

Dick Brothers & Company, of Philadelphia, have sent a circular letter to the stockholders of the Lehigh Valley Railroad Company, setting forth that in order to restore the property permanently to the dividend list a further change in the management should be effected. The letter says: "Our representation of the stock and bonds in the Lehigh Valley is perhaps the largest, outside of the Packer family. We are believers in the property as a property, but feel that it is not managed with the ability of the Pennsylvania Railroad or the Delaware, Lackawanna & Western.

Attorneys for the Delaware, Lackawanna & Western Railroad Company have filed a bill in equity against the New York, Susquehanna & Western Railroad Company and the New York, Susquehanna & Western Coal Company, to enforce a contract made by the defendants with the plaintiffs, wherein, in consideration of the fact that the Delaware, Lackawanna & Western would construct a railroad from Gravel Place to Jersey City, and for other considerations, which were fully referred to, it would carry the coal of the defendant company. The defendant company at present ships its coal over the Wilkes-Barre & Eastern Railroad. The Delaware, Lackawanna & Western, by means of the present proceedings desire to restrain the defendant company from shipping its coal in this manner, and to compel it to forward over plaintiff's road.

Bituminous.

With the exception of some Sound business, the soft coal market is very dull. There is quite a little demand coming from the Sound ports, and it seems to be more a question of getting the coal there than of securing the orders. Other consuming territories are apparently well stocked up. The weather lately has been good for using up these stocks, and the daily consumption is reported to be heavy. It is expected that the trade will show quite an improvement by the first of the year. The all-rail trade is good, and is a good aid to producers in partly filling up the gaps left by the limited demand from other places. New York harbor business is fair. A little also is doing in "transient" and spot orders.

Customers are urging deliveries on orders for those shoal water points which are not yet wholly closed by ice. Vessel captains now require ice-clauses in their charters for those points where trouble on account of ice is apprehended. The Chesapeake & Ohio canal closes on December 14th.

Considerable ice there is already reported. Nothing startling about the proposed "combination" has transpired. There have been some consultations among the various operators and interested parties. Nothing definite has been arrived at yet.

Prices are nominally unchanged. We quote f. o. b. at the various ports, as follows: Norfolk and Newport News, $1.90@$2.15; Baltimore, $2@2.20; Philadelphia, $1 75@2.20; New York harbor shipping ports, $2.20@$2 65; alongside New York harbor, $2.40@$2.75; alongside Boston, $2.75@3. There is just now considerable difficulty in getting the coal through to the shipping ports and prices, in consequence, are somewhat stiffer.

Transportation from the mines to tidewater is poor and shippers at the latter place are urgent in their calls for greater haste. Coal is taking from 5 to 10 days longer than usual to get through. When it does arrive it is promptly transferred to the vessels.

There is quite a number of vessels waiting for the coal now in transit. The car supply is equal to present requirements. Were full tonnages in order, there probably would be shortage of cars.

In the vessel market rates are stiffer. We quote as follows from Philadelphia: To Boston, Salem and Wareham, 90c.; Portland, 95c.; Providence, New Bedford, New Haven, Bridgeport and other Sound ports, 75c.; Lynn, $1@$1.25; Newburyport, $1.05; Portsmouth, 95c.; Bath, $1. From Norfolk, Newport News and Baltimore, rates are from 5 to 10c. higher.

NOTES OF THE WEEK.

The coal passing westward through the Sault Ste. Marie canals for the season of navigation has been as follows:

	1894.	1895.
Anthracite	526,470	445,277
Bituminous	2,261,311	2,107,804
Total	2,790,781	2,553,081

The decrease of 81,193 tons anthracite, and 156,590 tons bituminous, a total falling off this year of 237,703 tons is a somewhat unexpected result.

Coal receipts at San Francisco in November were 167,796 tons, the largest ever recorded in a single month with one exception, November, 1891, when 186,546 tons were received. For the eleven months ending November 30th the receipts were 1,304,665 tons, an increase of 86,819 tons, or 7·1% over the corresponding period of last year. The receipts this year were divided as follows: Eastern, Anthracite and Cumberland, 24,581 tons; Oregon and Washington, 412,390 tons; Alaska, 1,050 tons; British Columbia, 482,053 tons; Australia, 202,769 tons: Japan, 5,697 tons; Great Britain, 176,125 tons.

Buffalo. Dec. 12.

(From Our Special Correspondent.)

The cold weather helps the anthracite coal trade materially, and dealers are busy filling orders for the home demand and the needs of nearby towns and villages with some orders from Canada. The quotations are unchanged, but indications point to an advance at the opening of 1896.

Bituminous coal is in good demand. Manufacturers are busy, but navigation being over for the season the trade for vessels and tugs has ceased. The market may be called firm and the supply is adequate for the requirements of business.

There are yet a few vessels on the Lakes bound for Buffalo, but whether they will arrive is problematical for severe weather, with much ice and heavy snow, prevails all over the Lake districts. There will be a few shipments of coal to report this week, and then the season of 1895 will have to come to a close.

The movement of coal westward by lake from Buffalo from December 1st to 7th, both days inclusive, aggregated 107,165 net tons, distributed about as follows: 45,700 tons to Chicago, 23,700 tons to Milwaukee, 3,100 tons to Toledo, 4,800 tons to Superior, and 1,500 tons to Gladstone, and 28,365 tons to miscellaneous via. vessels from Tonawanda, not reported at Custom House. The rates of freight were 90c. to Chicago, 85c. to Milwaukee, 50c. to Toledo, and 30c. to Superior and Gladstone. Season of shipments over for 1895.

The Sault Ste. Marie Canals have closed for the season. The Baltimore & Ohio Southwestern Railroad is asking for bids for 1,000 box and coal cars. The harbor of Hollingwood is to be improved by dredging. Ten new steel steamers and barges are to be constructed this winter on the lakes, averaging 4,000 tons gross capacity on 14½ ft. depth of water. Next fall is the time stated for their delivery. Several other big vessels are to be built if reports are truthful. There passed through the Sault Ste. Marie canals from opening of navigation to December 1st, 1895, 2,107,804 net tons of soft and 445,227 net tons of hard coal; in 1894 the figures were 2,264,314 and 526,470 net tons, respectively, showing a considerable decrease this year.

Chicago. Dec. 11.

Anthracite Coal in Chicago has been in exceedingly good demand during the past week. The continuation of the cold weather, and the prospect of a cold winter has very materially influenced business, and therefore wholesalers as well as retailers have had about as much as they could well attend to to supply the demand. The report that shipments of hard coal to this market via the lakes had closed with last week was erroneous for several boats arrived during the week, and others are on the way. The tonnage of hard coal brought into Chicago by these boats was very large, and that to come in during the next week will greatly go towards filling up whatever any deficiency in the hard coal supply of Chicago. Shipments via rail are coming in fast, and soon the price of coal will be advanced 50c. per ton to offset the advance of 50c. per ton in rail freight rates. There is probably 40,000 tons less hard coal in this market at the present time, than Chicago's usual supply at the beginning of real winter, but as there was an equal deficiency in 1894, it is hardly probable that the shortage will make any material difference, though better conditions may greatly increase the demand.

Bituminous Coal.—Receipts have been greatly augmented recently, the great activity in the manufacture of iron and steel and other industries, having added great influence to the demand. The bituminous coal mines of Indiana, Ohio and Illinois are being developed on a large scale, and large shipments are being made to Chicago and elsewhere. Soft coal prices are fairly firm, with better prospects of future strength.

Pittsburg. Dec. 12.

Coal.—The river men are again anxiously awaiting another rise; they have everything in good order for a big run as soon as there is sufficient water. There is sufficient coal loaded in the pools and the harbor to supply the runs. The leading coal men have returned from Cincinnati, where they went to close the sale of the coal sent out on the late rise. "We all sold our coal, but obtained only fair prices in spite of the long drought, during which no coal was sent out at all; we blame railroad competition for the low rate." A combination at Cincinnati of all but one of the coal companies of the city appears to have been consummated and the coal is to be sold at 33 down town places at $3.25 on the hills and $2.50 per ton at the elevators. The coal men claim that it is not possible to sell coal at a profit at less than that figure and point to the recent heavy losses as proof.

Westmoreland County farmers are rapidly getting rid of their coal lands. Within a short time thousands of acres of desirable coal lands have been sold. Principal among the purchasers are A. W. Mallon, of Pittsburg, and H. C. Frick Coke Company.

Connellsville Coke.—There was a material falling off in the coke trade for the week, as compared with the preceding week so far as relates to production. The decrease amounted to 7,500 tons, while the output fell off 3,550 tons. The demand for more cars is a daily occurrence from all parts of the region. Another feature of the week was the removal of about 700 cars of stock coke, leaving the yards practically bare so to speak and ready for winter. Production this week will be increased as a majority of plants will run six days, and the output will depend on the car supply. Prospects for $2 coke the beginning of the year are not so bright, owing to the vigorous kicks by furnacemen and the slight slump in the iron trade, but $1.75 to $1.80 for furnace coke may be expected. The week's summary of this region show 16,159 ovens in blast with 1,768 idle. Production is now fully up with the demand upon the ovens charged. In the running order of the ovens in blast 1,569 made six days, and 14,916 ovens five days, and 43 ovens three days. The coke shipments from this region were, to Pittsburg and way points, 2,390 cars; to points East, 1,868 cars; to points West, 5,186 cars. Total, 9,444 cars.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Dec. 13, 1895.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending Dec. 14, 1894. F'ces.	Tons.	Week ending Dec. 13, 1895. F'ces.	Tons.	From Jan. '94. Tons.	From Jan., '95 Tons.
Anthracite.	33	16,665	59	28,030	854,410	1,184,367
Coke...	73	77,511	162	184,150	4,977,263	7,398,030
Charcoal...	24	4,540	23	5,450	208,698	211,295
Totals ..	130	98,716	244	227 630	6,040,371	8,793,792

The market continues to be largely a waiting one, and there are very few contracts yet announced for 1896 deliveries. Some concessions have been reported, but there are no signs as yet of any marked reduction in quotations on pig iron, beyond the moderate amount which may be nesessary to conciliate buyers. There are reports of the early closing down of mills here and there, but the way in which most of these are given out rather leads one familiar with the market to believe they are intended to affect prices.

The placing of orders for a number of large lake carriers with the shipbuilders has caused an active demand for plates from the Western mills, and contracts will probably have to be pretty well distributed to secure the early deliveries needed. Among these contracts we note 10 large ore carriers placed with various builders, two of them being for the Minnesota Iron Company and eight for the Rockefeller syndicate.

While the full official figures have not yet been received, an approximate statement puts the shipments of Lake Superior ore for the season at 10,325,000 tons, as follows: Escanaba and Gladstone, 2,850,000; Marquette, 1,100,000; Ashland, 2,350,000: Two Harbors, 2,125,000, Duluth and Superior, 1,900,000; total, 10,325,000 tons. The division by ranges will be given later. Navigation has closed for the season, but rail shipments to a considerable amount are talked of.

The season would not be complete without the usual yearly report of a consolidation of the Lake Superior ore interests under the leadership of the Rockefeller syndicate. We have before in the columns of the "Engineering and Mining Journal" given reasons why such a consolidation or trust could not eventually be successful. The fact seems to be that the syndicate named is only making arrangements for the better working of its own mines, and also for transporting its own ore on the lakes, as the Minnesota company now does.

NOTES OF THE WEEK.

The Erie & Pittsburg Dock Company has decided to rebuild its ore wharves at the port of Erie, Pa, during the winter. Nine new hoisting machines are to be put in, and a 20-ft. channel will be dredged all around the docks.

The Cambria Iron Company started up its plant of Otto-Hoffman coke ovens near Johnstown, Pa., November 22d, and they have been running steadily since that time. No figures have yet been given out, but it is stated that the coke furnished has been of very satisfactory quality. The results as to by-products have not been definitely ascertained.

Considerable uneasiness is expressed in the British iron trade over the extent to which Germany and Belgium are taking the trade of India, which is supposed to be especially a field for British commerce. The trade returns of India for the fiscal year ending March 30th, which have recently been published, show good grounds for this feeling. In 1890-91 the total imports of iron and steel into India were 4 559,368 tons, of which 3,769,052 tons, or 82.6% were from Great Britain; in 1891-92 the total was 4 435,115 tons, or 72.3%, coming from Great Britain; in 1892-93 the total was 4 191,996 tons, Great Britain furnishing 2,653,329 tons, or 63.3%; in 1893-94, the total was 4,685,246 tons, of which 2,740,997 tons, or 58.5, came from Great Britain; while in 1894-95, Great Britain furnished 2,326,474 tons, or 56.6%, out of a total of 4,110,091 tons. Belgium has made the chief inroads into British trade and last year supplied 1,624,270 tons, or 39.5% of the total. The imports of steel from Belgium—448,091 tons—exceeded those those from Great Britain by 78,338 tons.

New York. Dec. 13.

The dullness usually attending the close of the year is settling down on the local market, and business has been limited entirely to small orders. There are some reports as to contracts closed by local establishments for next year's supplies, but inquiry has failed to show that any of them have gone beyond the stage of negotiation. Most of them

seem to be anticipating a good business for some time to come. We hear, for instance, of some orders for new tools placed by several of the Newark shops, which point to an enlargement of facilities and an increase of plant, which would hardly be made on a declining trade. The engine and tool builders in Philadelphia, and Worcester, Fitchburg and other New England towns, are all busy.

Pig Iron.—Sales continue steady of small lots, but there have been no large transactions. While prices of better grades are steady, we have to quote a little lower on others. There seems to be an increased tendency to press Southern irons for sale, and some shading is reported; though nothing definite can be traced, there is an anticipation of lower rates.

We quote, for Northern brands, No. 1, $13.75@$14.25; No. 2, $12.75@$13.25; gray forge, $12@$12.50. Southern iron, No. 1 foundry, $13.75@$14; No. 2 foundry, $13.25@$13.75; No. 1 soft, $13.25@$13.75; No. 2 soft, $12.75@$13.25; forge, $12@$12.50. All prices are for tidewater delivery.

Cast Iron Pipe.—No actual business is reported, but negotiations are pending upon some good-sized contracts for New England, delivery next spring.

Spiegeleisen and Ferro-Manganese.—Business is not active, though a considerable amount of imports is noted. Quotations are nominally $51.50@$52 for ferro-manganese, and $25.25@$25.75 for spiegeleisen.

Steel Billets.—The market is quiet and prices are again somewhat lower. Billets are quoted at $19.50@$20.25 at tidewater; rods at $29.25@$30. No large transactions are noted.

Structural Iron and Steel.—The strike in the building trade has at last been formally declared off, the result being substantially a defeat for the men. Business is active for the season, and we do not note any change in prices. We quote for angles, 1·60@1·70c.; channels, 1·70@1·80c.; tees, 1·75@1·85c.; beams (up to 15-in.), 1.70@1·80c. for large orders, and 2@2.10c. for small lots.

Plates.—Business is quiet and prices are a little lower all around. Universal mill plates are 1·60@1·75c. For steel plates we quote: Tank, 1·55@1·65c.; boiler shell, 1·85@1·95c.; good flange, 1·90@2c.; firebox, 2·20@2·50c.

Merchant Iron and Steel.—The demand has been rather light and there is a disposition to reduce prices on good orders. Bar iron is lower, and we quote 1·25@1·40c. for common and 1·35@1·50c. for refined. Soft steel bars are 1·30@1·40c.; open-hearth machinery steel, 1·50@1·60c.; steel hoops 1·65@1·75c.; steel axles, 1·55@1.75c.; links and pins, 1·55@1·70c.; tire steel, 1·80@1·90c.; spring steel, 2·10@2·25c.

Steel Rails and Rail Fastenings.—Standard sections are quoted without change, $28 per ton at mill, and $28.75 at tidewater. Rail fastenings are steadily in demand and quotations are: Fish and angle-plates, 1·45@1·50c.; spikes, 1·80@1·85c.; bolts, 2·10@2·25c., for square nuts, and 2·15@2·30c. for hexagon nuts.

Scrap Iron.—For foundry scrap we continue to quote nominally $10.50@$12. The demand is not quite so urgent, but good lots have no difficulty in finding takers.

Buffalo, N. Y. Dec. 11.

(Special Report of Rogers, Brown & Co.)

There has been what might be called a break in prices of northern or lake ore foundry irons which has had a stimulating effect upon trade, and under the influence of these lower prices large contracts running through the whole or part of next year have been consummated. These contracts have been made under the impression on the part of buyers that the prices are likely to recover on the turn of the year, and on the part of the sellers that the iron is not likely to net them a loss. Therefore the sales are a fair gamble. The larger producers of foundry iron in the South are holding firmly to the schedule agreed upon some time ago. Some of the weaker furnaces, we understand have offered concessions in some cases. The odd lots owned by speculators are about cleaned up, which fact has given the Southern producers much encouragement. Prices in general remain as quoted below, but in some instances these have been shaded: No. 1 Foundry strong coke iron, Lake Superior ore, $14.50; No. 2 Foundry strong coke iron, Lake Superior ore, $14; Ohio strong softener No. 1, $16.25@$16.75; Ohio strong softener No. 2, $15.25@$15.75; Jackson County silvery No. 1, $16.25@$17; Southern soft No. 1, $15.15@$15.65; Southern soft No. 2, $14.65@$15.05; Hanging Rock charcoal, $18.50; Lake Superior charcoal, $16.75.

Chicago. Dec. 11.

(From Our Special Correspondent.)

There is no apparent change in the condition of the Chicago iron market, the buying of all material continuing light. The situation appears to be a waiting one, for there is a great deal of uncertainty prevailing among both consumers and dealers as to next year's prices. This is particularly evident in the pig iron business, and in consequence the sales of that material are very limited at the present me. The Illinois Steel Company reports that its entire output of all material during 1895 has almost doubled that of 1894, and if expectations are realized the output of 1896 will be by far the greatest in the history of the company. At the Joliet mills one day last week no less than 1,625 tons of soft steel billets were turned out, that figure being the banner day for production. The plate mills of the company at South Chicago have orders on hand to keep them running until March 1st. The company has already secured contracts for supplying plates for six of the nine new steel boats lately contracted for by J. D. Rockefeller.

Pig Iron.—The business transacted in pig iron during the past week has been light, not more than 3,000 tons having been placed by both the Northern and Southern furnaces. Most of the iron being bought now is used in the manufacture of car wheels, such manufacturing concerns having been the heaviest buyers during the past few weeks. Charcoal iron is in most demand. A couple of hundred tons represents the largest sale of the week, and carloads was the usual call. There is much uncertainty now in the minds of consumers and dealers as to future prices, consumers, as a rule, being under the impression that with the advent of the new year prices will come down, and they are evidently waiting until that is settled before placing any large contracts. Dealers do not believe that there will be any decrease in prices, and are therefore looking forward to a considerable January business, when the consumer finds that prices will not change any. Prices during the past week have been a trifle weak, though there is nothing in it to indicate any decrease. Quotations are as follows: Lake Superior charcoal, $16; Lake Superior coke, No. 1, $15@$15.50 No. 2, $14.50@$15; No. 3, $14@$14.50; local Scotch No. 1, $15; No. 2, $14.50; No. 3, $14; Jackson County silveries, $15.50@$16; Southern coke, foundry, No. 1, $14.25; No. 2, $14; No. 3, $13.75; Southern soft, No. 1, $14.25; No. 2, $14; Southern car-wheel iron, $17.50; Southern silveries No. 1, $15.25; No. 2, $15; Tennessee charcoal No. 1, $13@$13.50; Bessemer, $18. Ohio strong softeners, $15@$15.50.

Structural Material.—But a limited business in structural material has been transacted. Small lots being the rule. Quotations are as follows: For universal plates, 1·80@1·85c.; beams and channels, 1·90@2c; angles, 1.85@1·90c; tees, 2@2·10c.

Merchant Steel.—The market has not changed at all, business continuing to be of a light nature. Inquiry remains about the same. Prices are as follows: Tool steel, 5@7·50c.; Bessemer bars, 1·65@1·75c.; smooth finished machinery, 1·95@2c.; tire steel, 2·20@2·25c.

Bar Iron.—Business in bars is about of the same proportions as for a number of weeks past. The buying continues mostly from small manufacturing concerns and car builders. Quotations are 1.60c. for common iron, and refined 1·55@1·60.

Billets and Rods.—There have been but few sales of billets and rods in this market during the week. The Illinois Steel Company reports that its mills are running full on old contracts, and that they are making no quotations on next year's business.

Steel Rails.—No transactions of any account are recorded in rails during the week.

Old Rails and Wheels.—There have been no sales of either old iron rails or wheels in this market during the week just past. Old iron rails are quoted $16@$17, and old wheels $13.50.

Cleveland, O. Dec. 12.

(From Our Special Correspondent.)

The entrance of John D. Rockefeller into the lake carrying trade has been the sensation of the week in iron ore circles. During the past few days Mr. Rockefeller has closed contracts, through Pickards, Mather & Co., for the construction of 12 immense freight vessels, ranging from 405 to 440 ft. in length, to be completed from May to August of next year. This is the largest deal of the kind ever made. The fleet will have a capacity for bringing down from Lake Superior to Lake Erie ports, 1,000,000 tons of ore in a season. The effect of the announcement has already been to weaken the position of vessel owners with respect to next season's charters. Carriers who were talking from $1.25 to $1.40 for next season are now much more moderate in their views and say the rate will be somewhere between $1 and $1.25. Within the past few days some season tonnage for next year has been secured for Marquette ore at 90c. The Rockefeller vessel contracts will absorb the entire capacity of the six modern shipbuilding plants on the great lakes, previously disengaged up to the middle of next season. Altogether about 40 large freighters will be constructed during the year, and their combined capacity will be over 2,500,000 tons of ore for a full season.

A number of vessels, ore laden, are still on the lakes, but the last cargos for the season have been loaded and within several days, everything, barring accidents, will be in port of destination and the season for 1895 ended.

It is said that Mr. Rockefeller is favorably disposed towards a proper limitation of the Bessemer output, and that the prospects for regulative understanding among high-grade ore shippers for next season is very good, although prices for 1896 will probably not be gone into before the opening of the new year. There is still some question whether all the Mesabi producers will assent to a curb upon unlimited production, but the disposition seems to be tending that way.

So far as actual sales go there are none this week and only slight inquiry. Only a few undesirable lots of ore, non-Bessemers, now lie unsold on the Lake Erie docks.

Nominal quotations on ore are as follows: Standard specular Bessemer, $4.50@$4.75; standard hematite Bessemer, $4@$4.25; standard specular non-Bessemer, $3.50@$3.75; standard hematite non-Bessemer, $3@$3.25.

Pittsburg. Dec. 12.

(From Our Special Correspondent.)

Raw Iron and Steel.—Business since our last has continued comparatively quiet. The period of holiday activity is usually one of increasing apathy; producers generally are awaiting the absorption by consumers of stocks bought in anticipation of demand early in the fall, and the natural tendency to curtail operations at the onset of December on account of the downward trend, and continued uncertainty with regard to the near future of prices.

Increasing dullness in trade and general weakness in prices are the dominant features of the iron and steel industry, and there is little prospect of improvement in the situation until after the close of the year. One thing is very preceptible; most consumers have less stock on hand than was generally supposed, and hence many are under the necessity of making purchases of raw iron to tide them over the balance of the month of December.

The skirmishing for winter work for the iron and steel mills has found prices down at a low point; some of the mills are nearing the end of their order books, and must have new business, and are therefore disposed to make concessions to obtain the same. The railroad demand for rails which is expected to carry the trade to a higher point in the matter of consumption than has ever been reached, and to advance prices beyond the full level, has not yet set in. Consumers know that this inquiry is yet to come, that it will be most important when it does come, and that prices must rise in consequence; but still they do not close with the present opportunity. The market may be termed a waiting one. From this time calculations will be figured on of what will be the actual cost of making iron and steel for for 1896 delivery. A few sales have been made to parties who had contracts in hand extending into the first quarter of the incoming year. The cost of coke and iron ore will add materially to first cost.

The Duquesne forge, at Rankin, started up in full force, after making important improvements, with sufficient orders booked to keep them busy all winter. It is again going the rounds that a company has been organized at Cleveland, O., with a capital of $1,250,000, to build works to rival the Carnegie Company; it would require more capital than that to build one corner of the Edgar Thompson plant, to say nothing about a dozen other establishments.

The Ohio Valley furnaces are generally busy and claim to have sufficient orders on hand to keep them busy for some time.

One of our big firms that owns eleven blast furnaces produced during November 102,000 tons pig iron.

The volume of transactions was fair; prices for all descriptions are weak and uncertain; while sales show wide range as relates to value. The opinion seems general that business will be dull the balance of December.

The latest noted is that Bessemer pig shows a slight decline, with sales of 5,000 tons, January, February and March deliveries, at $12 per ton in Pittsburg.

COKE SMELTED, LAKE AND NATIVE ORE.

Tons.		Cash.
6,000	Bessemer, Jan., Feb., March, Pittsburg	$13.00
4,000	Bessemer, Dec., Jan., Feb., Pittsburg	13.10
2,000	Bessemer, Dec., Jan., Pittsburg	13 00
2,000	Bessemer, Jan., Feb., March, Valley	12.25
2,000	Bessemer, Jan., Feb., March, Valley	12.25
2,000	Bessemer, Dec., Pittsburg	12.75
1,000	Bessemer, Dec., Pittsburg	11.85
1,000	Gray Forge, Dec., Jan., Feb., Pittsburg	12.00
500	Off Bessemer, Dec., Pittsburg	11.75
500	Bessemer, by Valley Fur., delivered at Cleveland	12.75
200	Gray Forge, Prompt, Pittsburg	12.25
100	Gray Forge, Dec., Pittsburg	12.75
100	Bessemer, Dec., Pittsburg	13.00
50	No. 2 Foundry, Pittsburg	13.50
50	Gray Forge, Pittsburg	12.50
50	No. 3 Foundry, Pittsburg	13.25
50	No. 2 Foundry, Pittsburg	13.50

CHARCOAL.

100	Cold Blast	$21.00
50	No. 2 Foundry	17.25
50	No. 2 Foundry	17.25
50	Warm Blast	16.00

BLOOMS, BILLETS AND SLABS AT MILL.

1,200	Billets, Dec., Jan., at mill	$17.75

Tons.		Cash.
1,000	Billets, Jan., at mill	18.00
600	Billets, Dec., at Wheeling	16.90
500	Billets, prompt at mill	17.80
500	Billets, Dec., at mill	17.50
400	Billets, Dec., at Wheeling	17.00
200	Billets, prompt at mill	17.50

SKELP IRON.

375	Sheared	$1.60 4 m.
300	Wide gr'v'd	1.30 4 m.
225	Nr'w gr'v'd	1.30 4 m.

SKELP STEEL.

300	Sheared	$1.50 4 m.
205	Wide gr'v'd	1.25 4 m.
100	Nr'w gr'v'd	1.25 4 m.

BLOOMS, BILLETS AND BAR ENDS.

500	Billet Ends	$15.00

SHEET BARS.

500	Delivered	$20.00

FERRO-MANGANESE.

50	80%	$56.00

MUCK BAR.

300	Neutral, deliv	$20.50

STEEL WIRE RODS

300	5-gauge at mill	$25.00

SPELTER.

100	Prime Western	$3.25

OLD RAILS.

500	Iron Rails	$16.00
250	Iron Rails	16.50
250	Steel Rails, mixed	13.50

SCRAP MATERIAL.

300	No. 1 Wrought scrap, net	$13.50
250	Cast scrap, gross	11.00
150	Old car wheels, gross	12.00
100	Cast borings, net	7.50

Philadelphia. Dec. 12.

(From Our Special Correspondent.)

Pig Iron.—On the surface it looks as if pig iron quotations would be crowded down about 50c. before large 1896 requirements will be covered. Consumers are wanting to know what iron can be had for in January. They argue that the enormous production warrants a drop on forge and foundry. This week's business has been light. Makers are not anxious to shade below $11.75 for standard forge, or $13.50 for No. 1. Every one is waiting, and, meantime, stocks are getting low in many yards. Buyers talk as though there would be nothing else but hand to mouth buying for a few weeks. Margins on finished products are declining and new work is not coming in right, hence the dullness in pig. No. 2 foundry is about $12.50.

Steel Billets.—The waiting game of eastern users of billets is still pursued though some privately admit it is risky. There are certain signs that the market may take a sudden turn. Sellers would take a large order at $19; buyers have let remarks drop that they were ready to do business at $18.50. One broker representing buyers says eastern requirements are very large, but they will not be covered at makers' present prices. The truth is there is no clear understanding of the market or what course it is likely to take.

Merchant Iron.—Matters are more unsatisfactory. The possibility of cheaper forge iron makes millmen slow to buy. Besides new business does not warrant it. Everything is at a stand-still. In three weeks we will see our way. Prices lately quoted at mill on large orders show that mill-owners are willing to work on very narrow margins. Stores sell at 1·55c.

Skelp.—The mills are low in work. Buyers can make better terms now than they will likely make next month. Grooved is quoted at 1·30.

Sheets.—Just about the same words explain the sheet mill situation, although the outlook is better for good January business. The larger users of heavy sheets are waiting for the settling of prices.

Pipes and Tubes.—On the whole there has been a fair business because of machine shop and factory activity. Tube work has permanently improved. Discount on butt black is 57½; galvanized, 52½.

Merchant Steel.—Apart from liberal shipment to stores for winter distribution there has been very little done.

Plate and Tank.—Large ship-building orders are talked about but it will be some weeks before anything will be definately known. The shipbuilders have requirements for the next two or three months pretty well covered.

Structural Material.—There has been nothing to bid on this week and representatives of mills feel that to secure large orders at this time, even if buyers were in the market, they would have to shade more than they care to in absence of bona-fide inquirers. Angles, 1·60; beams and channels, 1·65.

Steel Rails.—Only small sales are reported; $28 for standard sections.

Old Rails.—Prices have dropped $1; even this does not sell them.

Scrap.—Prices are off a little. There is no particular demand. For railroad $14 is offered and for heavy steel scrap $13 might be paid. No. 1 wrought is held at $13.50. Other kinds are not much sought after.

METAL MARKET.

NEW YORK, Friday Evening, Dec. 13, 1895.

Gold and Silver.

Prices of Silver per Ounce Troy.

Dec.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.	Dec.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.
7	4·89	30 2/16	66⅛	·517	11	4·88½	30 1/16	65⅝	·508
9	4·88¾	30 1/16	65½	·514	12	4·88½	30	65⅝	·508
10	4·88¾	30 2/16	66	·510	13	4·88½	3 1/16	66	·510

Owing to the lack of orders from China and Japan, coupled with the fact that China has thrown some metal on the market, silver has had an abrupt and sharp decline; and the market looked as if it would go below 30d, but continental orders coming in reinforced by some speculative buying, the price has steadied itself around 30 3/16d. At this price the market closes steady.

The United States Assay Office at New York reports the total receipts of silver at 89,000 oz. for the week.

Gold and Silver Exports and Imports.

At all United States ports, October, 1895, and years 1895 and 1894 in coin and bullion:

	Gold.		Silver.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
Oct..	$1,873,897	$1,787,776	$4,594,447	$1,325,127	E. $3,355,441
1895..	75,064 179	30,627,715	43,259,057	9,305,791	E. 78,389,730
1894..	91,589,322	18,294,010	39.744,139	8,309.348	E.194,730.103

Imports and exports of gold and silver in ores for the ten months to October 31st are reported as below:

	Gold		Silver	
	1894.	1895.	1891.	1895.
Imports	$611,503	$1,513,314	$6,186,637	$10,256,897
Exports	25,559	340,463	200,101	199,825
Excess, Imports.	$615,944	$1,172,851	$5,986,536	$10,057,072

These imports and exports in ores are not included in the table of exports and imports of coin and bullion given above.

Adding the exports and imports in ores to those in coin and bullion, we have the following statement for the ten months of the present year to October 31st:

	Exports.	Imports.	Excess.
Gold	$75,404,642	$32,141,029	E. $43 263,613
Silver	43,458 882	19.562,688	E. 23,896,194
Total	$118,863,524	$51,703,717	E. $67,159,807

The statement includes all United States ports, the figures being furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending December 13th, 1895, and for year from January 1st, 1895, 1894, 1893 and 1892:

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$1,225,575	$963.330	$74,685	$16,418	E. $320,512
1895..	66,006,652	28,509.947	36,160,78?	1,592,342	E. 72,065,151
1894..	90,426,401	15,386,437	32,051,026	1,665,388	E. 104.425,605
1893..	72,716,310	62,803,435	31,887,506	3,131,309	E. 38,669,072
1892..	66.152.349	8,449.967	22,161,658	2,979 638	E. 76,884,402

Of the gold exported for the week $212,400 went to the West Indies and the balance to Germany; of the silver $125,180 went to Guatemala, $3,080 to the West Indies and the rest to London. The gold imported came chiefly from the West Indies; the silver came from South America.

FINANCIAL NOTES OF THE WEEK.

General business has been comparatively quiet during the week, the lull being partly due to the approaching end of the year and partly to some hesitation as to the course of Congress on the currency question, and to the somewhat depressing effect of continued gold exports. The general conviction that Congress will do nothing at this session has been strengthened by the opening proceedings. At the same time it must be noted that there is but little slackening in manufacturing, and that the retail trade is reported good.

Foreign trade returns continue to show a gain in the exports of manufactures, which is encouraging.

The report of the Secretary of the Treasury has not yet been transmitted to Congress, but it is now announced that it will be sent in on Monday next.

There is a good deal of talk of a new issue of bonds to replenish the gold reserve, but nothing definite is yet known. Probably nothing will be settled until Congress has had an opportunity to take some action.

The "Commercial and Financial Chronicle" says of the report of bank clearings for the month of November: The bank clearings for November make a much smaller percentage of gain than in the months preceding, the increase being 13·6%, against 22·1% in October. Owing to the reduced gains here in the East, the percentages of improvement for the different sections do not this time show such wide extremes as in some of the earlier months. For the Middle States the increase is 16·0%, for the New England group 14·0%, for the Southern group 9·6%, for the Far Western group 9·2% and for the Pacific group 11·7%. In the Middle Western group, however, the gain is only 5·0%. The result in that group is largely controlled by the result for Chicago, which point has only 4·0% gain.

Among the bills introduced in the Senate this week was one by Mr. Sherman (by request) authorizing the Secretary of the Treasury to issue long-term bonds at a rate of interest not exceeding 3 per cent. of denominations of $50 and under, in such sums and at such dates as may be required for the redemption and retirement of all the outstanding demand notes of the United States; that these bonds be offered at par to citizens of this country only and the proceeds be devoted to the cancellation of the demand notes as they may be presented or received into the treasury in the regular course of business. The bill provides that the bonds authorized in this act can be exchanged for bonds already in the possession of organized banks, or newly organized banks, and that such bonds shall be received in exchange for those already in their possession, and that such and all national banks may receive from the Treasury Department bank notes of the sum and par value of the bonds so deposited.

The International Bimetallic Conference, which met in Paris, December 10th, is made up of delegates from the bimetallic leagues of France, Great Britian and Germany; sessions have continued through the week. On Thursday the conference finally agreed upon the terms of its principal resolutions, which the British delegates have been authorized to induce the American bimetallic leagues to accept. The delegates then visited M. Doumer, Minister of Finance, who said the Government could only regard favorably a campaign undertaken to check the consequences of a monetary crisis, the existence of which none could deny. Count Von Kardoff, on behalf of the German delegates, and Mr. Smith, on behalf of the British delegates spoke, the latter saying that the British delegates would return to England with complete confidence in the future of international bimetallism. M. Doumer said he rejoiced because of this, for upon the success of the efforts of Great Britain largely depended the solution of the question. Prime Minister Bourgeois received the delegates after their visit to the Ministry of Finance, and subsequently they visited President Faure. The President assured them of the deep interest he took in their labors.

Shipments of gold so far this week include $1,000,000 to Germany and $200,000 to Cuba. No gold is reported taken for shipment by Saturday's steamers up to the present writing, and there is a fair supply of commercial bills offering.

Shipments of specie from San Francisco in November were $2,256,931, showing an increase of $207,884 over November of last year. The shipments this year included $1,945,334 in silver and $22,167 in gold to China, and $256,430 in silver to Japan.

The amounts and descriptions of specie shipped from San Francisco for the 11 months ending November 30th compare as follows:

	1894.	1895.
Silver bars	$6,826,976	$7,661,446
Mexican dollars	5,013,275	9,232,596
S. American dollars	170.277	10,198
Gold coin	12 887,747	4,557,615
Silver coin	610,667	295,091
Gold dust	2,791	7,107
Total	$25,511,733	$21,764,353

The destinations of the above shipments were as follows:

	1894.	1895.
Hongkong	$5,306,997	$9,805,120
Shanghai	906,800	5,618,848
Japan	5,788,447	1,339,024
Central America	424,943	276,298
Honolulu	456,950	396,040
Mexico	16,700	4,850
Samoa	3,000	.....
New York	12.607,896	4,321,473
Total	$25,511,733	$21,764,353

The total increase in shipments to China and Japan was $4,760,748, or 39·7%, this year.

The statement of the United States Treasury on Thursday, December 12th, shows balances in excess of outstanding certificates as below, comparison being made with the corresponding day of last week:

	Dec. 5.	Dec. 12.	Changes.
Gold	$79.527,307	$76,837,000	D. $2,690,307
Silver	13,557,152	14,648,487	I. 1,091,335
Legal tenders	66,731.796	70,87?,182	I. 4,140,686
Treasury notes, etc.	23,613,423	22,791,352	D. 819,071
Total	$185,152,821	$183,429,678	I. $1,723,143

Government deposits with national banks on the same date amounted to $15,109,696, an increase of $195,764 during the week.

Total United States Treasury notes issued under act of July 14th, 1890, in general circulation and in the Treasury, $139,254,280. Against these are held in the Treasury 15,252,608 coined standard silver dollars, and silver bullion purchased at a cost of $124,001,762, making a total of $139,254,370.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending December 7th gives the following totals, comparisons being made with the corresponding weeks in 1894 and 1893:

	1893.	1894.	1895.
Loans and discounts	$412,343,600	$507,733,500	$521,686,500
Deposits	492,802,300	566,050,200	489,820,000
Circulation	13,602,100	11,185,100	14,003,000
Specie	104,909,500	59,170,000	67,371,900
Legal tenders	94.856.500	115,245,200	83,344,000
Total reserve	$199,766,000	$174,415,200	$151,715,900
Legal requirement	123,205,575	141,512,550	130,421,625
Surplus reserve	$76.566,425	$32,902,650	$21,294,275

Changes for the week this year were increases of $1,680,975 in surplus reserve; $1,220,400 in specie; $685,200 in legal tenders, $838,500 in deposits and $41,100 in circulation; a decrease of $208,800 in loans.

The movement of the precious metals in Germany for the nine months ending September 30th is reported as below, gold and silver both being included:

	1894. Marks.	1895. Marks.
Imports	170 637,000	69,034,000
Exports	73,319,000	68,387,000
Excess, imports	97,318,000	647,000

The decrease in the imports is very marked. The exports varied but little from last year.

It is reported that the Chilean Government is about to place a loan of $30,000 000 in London, the proceeds to be used in railroad building, in port improvements and in other public works.

For convenience of comparison we have grouped together in the table below the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding dates last year:

	Gold.	Silver.	Total.
Asso. Banks of New York	.....	.....	$67,371,900
1894	.....	.....	59,170,000
Bank of England	$223,622,905	.....	223,622,905
1894	168,717,230	.....	168,717,230
Bank of France	391,888,700	$247,114,300	639,003,000
1894	406,485,051	247,841,391	654,326,442
Imp. Bank of Germany	.....	.....	229,420,000
1894	.....	.....	262,390,000
Austro-Hungarian Bank	120,676,250	69,945,000	190,621,050
1894	75,360,000	70,990,000	146,350,000
Netherlands Bank	18,579,000	34,100,000	52,679,000
1894	20,411,000	34,132,000	54,543,000
Belgian National Bank	.....	.....	20,733,000
1894	.....	.....	26,063,000
Bank of Spain	40,022,000	53,376,000	93,398,000
1894	40,021,000	52,803,000	92,824,000
Bank of Italy	59,495,000	9,575,000	69,070,000
1894	.....	.....	.....
Imp. Bank of Russia	351,560,000	47,240,000	398,800,000
1894	.....	.....	.....

The return for the Associated Banks of New York is of date December 7th; all the others are of date December 12th, except the Bank of Italy, whose return is dated October 31st, and the Bank of Russia, November 1st-13th. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports its gold only, not considering silver at all. The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately.

Indian exchange has been stronger, and not only were the full 50 lakhs of Council bills offered in London for the week all taken, but the price was higher, the average being 13 3/4d. per rupee. Business in India is improving, and there has been an increase in the current rates of discount in Calcutta and Bombay. For the time shipments of gold have ceased, but exports of merchandise are increasing rapidly.

Shipments of silver from London to the East for the year to November 21st are reported by Messrs. Pixley & Abell's circular as below:

	1894.	1895.	Changes.
India	£4,560,713	£3,290,695	D. £1,270,018
China	2,711,771	1,585,610	D. 1,126,161
The Straits	1,187,146	698,853	D. 488,293
Total	£8,459,630	£5,575,158	D. £2,884,472

The large decrease shown this year has been only partly made up by the increased shipments from San Francisco shown above.

A recently published statement shows that the position of the Bank of Japan has been very much affected by the war. A year ago the Bank had in circulation 110,000,000 yen in notes, and its silver reserve was 61,000,000 yen. At the present time the circulation is 145,000,000 yen, while the silver reserve is 37,000,000 yen, or about 25·5%. The Bank also holds, however, 17,500,000 yen in gold as a special reserve.

The Austrian Finance Minister has laid a report before the Reichsrath on the currency changes and the withdrawal of the State notes. Under the law, both governments (Austrian and Hungarian) are authorized to withdraw 200,000 florin notes of the State to begin with, and to use 169,000,000 florins gold coin and 40,000,000 florins in silver crowns for this purpose. Up to October 31st, a total of 142,780,000 florins worth of the notes had been withdrawn, 70% being for the account of Austria, and 30% for that of Hungary. For this joint amount withdrawn 117,600,000 florins gold coins—that is, 20-crown pieces—were deposited in the Austro-Hungarian Bank, which gave 35,400,000 florins in silver florins, and 70,000,000 florins in bank-notes for them, so that the Finance Minister still has a credit of over 2,300,000 florins at the Bank. The two finance ministers have 57,300,000 florins more in notes to withdraw to make up the amount of 200,000,000. This is a great step forward in the currency reform.

Domestic and Foreign Coins.

The following are the latest market quotations for the leading foreign coins:

	Bid.	Asked.
Mexican dollars	$0.53	$0.54
Peruvian soles and Chilean pesos	.46½	.49
Victoria sovereigns	4.87	4.90
Twenty francs	3.86	3.90
Twenty marks	4.75	4.80
Spanish 25 pesetas	4.83	4.85

Other Metals.

Copper.—The market continues in a very apathetic condition, both buyers and sellers pursuing a waiting attitude. We hear of very few transactions, and these appear to have been brought about on a somewhat lower level of prices. Not that manufacturers were fully supplied for any considerable time ahead, but they are impregnated with the idea that by waiting they will be able to cover their wants at still lower figures. The market is more or less nominal, and quotations must be called approximately 10 1/16@10 3/4 for Lake, 10@10 1/4 for electrolytic, 9 7/8@10c. for casting, and 9 3/4 for cathodes. The foreign market has been quiet but steady, opening early in the week at £42 15s. for spot and £43 2s. 6d. for three months prompt; the closing quotations are £42 15s. for spot and £43 2s. 6d. for three months prompt—the week closing as it opened. Business for export has been more satisfactory so far as volume is concerned, but not as to values, which again show a material decline, at least so far as the better grades of copper are concerned, the pressure to market large quantities thereof having been altogether too strong, to stand the resistance. For refined and manufactured, we quote: English tough, £45 15s. @£46; best selected, £46 15s.@£47; strong sheets, £53; India sheets, £51 10s.; yellow metal, 4 1/4d.

Exports of copper from Chile for the eleven months ending November 30th, were equivalent to 20,294 long tons of fine copper. This compares with 19,085 tons for the corresponding period last year; 19,293 tons in 1893; 20,115 tons in 1892; 18,776 tons in 1891, and 24,522 tons in 1890.

Copper Exports.—The exports of copper from the port of New York during the week ending December 13th, as reported by the New York Metal Exchange, were as follows:

Copper:			
Liverpool—Tauric	Pigs	150	tons.
" —Teutonic	"	100	"
Rotterdam—Maasdam	"	50	"
" —Werkendam	Plates	36	"
Antwerp—Westernland	Ingots	10	"
Mexico—Seguranca	"	1	"
Hamburg—Persia	Plates	1	"
Swansea—Exeter City	Pigs	100	"
Trieste—Pocahontas	Ingots	50	"
" "	Bars	72	"
" "	Plates	30	"
Rotterdam—Werkendam	"	102	"
" "	Ingots	178	"
" "	Pigs	50	"
Hamburg—Persia	Bars	28	"
" "	Cakes	11	"
" "	Ingots	10	"
Breman—Munchen	"	20	"
Havre—La Normandie	"	43	"
" "	Bars	68	"
" "	Plates	25	"
Genoa—Kaiser Wilhelm	Plates	56	"
Matte:			
Liverpool—Holbein		140	"
" —Umbria		97	"
" —Tauric		135	"
Swansea—Exeter City		15	"

Exports of copper from Baltimore for the week ending December 13th, as reported by our special correspondent, were as follows:

Copper:			
Havre—Alcides	12,200 Bars	1,009,162	lbs.
Rotterdam—Durango	4,038 Ingots	67,200	"
" "	525 Bars	45,111	"
Hamburg—Markomannia	848 Cakes	225,584	"
" "	13,496 Ingots	268,800	"
Liverpool—Sedgemore	5 Bars	67	"
Matte:			
Liverpool—Ulstermore		224,000	lbs.

This is a total of 1,185 long tons of copper, and 387 tons of matte from New York, and of 722 tons of copper and 100 tons of matte from Baltimore; making in all 1,907 tons of copper and 487 tons of matte exported for the week. We note also the arrival of 132 tons of matte from Mexico during the week.

Tin continued to be very unsettled, and was particularly so this week as a result of the sudden and material decline which took place in silver. As a consequence of the latter, the East became a free seller at lower values, and large quantities were constantly thrown on the market at prices lower than have been accepted for a considerable time past. Business was done down to 13·80 for January delivery, but there is a somewhat better feeling at the close, prices being now quoted 13·95 for spot and December, and 13·85 for January-February.

The London market, for the reasons above stated, declined to £61 5s., a considerable drop when compared with £62 10s., the closing quotation of last week. The tendency for silver being, however, somewhat firmer, the market has slightly improved and advanced to £62, but the tone is not very strong.

Lead has been exceedingly dull throughout the week, and, some of the refiners being desirous of effecting sales, prices took a sudden turn and dropped to 3·20, and even at this figure little could be marketed. This is not surprising, as at this time of the year, consumers are not in the habit of increasing their stocks. The decline was probably helped along by an easier tendency in the foreign market, where values for Spanish lead declined to £11 7s. 6d., and for English to £11 10s. These prices are, of course, still considerably above those ruling here, and though at a time when business becomes more active, this will have a strengthening influence on our market here, it is not the case now because consumption is altogether too light, and our domestic production sufficiently large to cover it.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is unsettled and prices are gradually dropping. Latest sales are on a basis of 3@3 02 1/2, and the demand is fairly active at the decline.

Spelter.—The firmness which we heralded last week was not of long duration. The higher prices which some of the smelters tried to establish have not resulted in an increase of orders from consumers, but have on the contrary brought out a good deal of metal, sufficient to weaken the market, which closes at about 3·20 St. Louis and 3·45 New York.

Antimony is quiet at 7 3/4 for Cookson's; 7 1/4 for U. S. Star, and 7c. for Hallett's.

Quicksilver.—No change in prices is reported this week, and we continue to quote $40 per flask, New York. The London price is £7 7s. 6d. per flask, with £7 3s. 9d.@£7 5s. quoted from second hands.

Nickel.—The market is quiet and without any change in prices, which may still be given at 34@37c. per lb. London quotations are steady at 13@15d. per lb.

Aluminum.—The latest price list of the producers quotes No. 1 metal, over 98% pure, in rolling ingots, 55c., 52c. and 50c. per lb., the prices being respectively for small lots, for 100-lb. lots and for ton lots; No. 1 metal, in ingots for remelting, 53c., 50c. and 48c. per pound; No. 2, over 94% pure, in ingots for remelting, 50c., 48c. and 45c per lb. Castings are quoted 60c. per lb. up, according to pattern and size of order. Sheets, 56c.@$3.50 per lb., according to size and thickness. Angles, channels, beams, etc., in orders of not less than 1,000 lbs., $1 per lb. with a special discount for large orders.

In London, ingots, 98% pure, are quoted 18 1/2@19d. per lb. for small lots, 17@18d. per lb. for large orders.

Bismuth.—Quotations vary from $1.30 to $1.75 per pound, New York, according to grade and size of order. The demand is chiefly for use in bearing metal alloys, and is increasing.

Iridium.—The demand is small, and for special purposes. The price varies from $25 to $35 per ounce, according to order and quality.

Magnesium.—The maker's prices are as follows, at works in Germany: 27 mark per kilo.—equivalent to $2.94 per lb.—for ingots; 26 marks per kilo. for bars; 36 marks per kilo. for powder, and 38 marks for ribbon and wire. For orders of less than 10 kilos., 1 mark per kilo. must be added for ingots of bars, and 2 marks for wire, etc.

Monazite.—The following quotations have been furnished us by parties dealing extensively in the mineral: Monazite containing 1 1/2 to 3% thorium oxide, 8c. per lb.; 2 to 3%, 10c.; 3 to 4%, 15c.; 5 to 7%, 25c.; 7 to 9%, 30c.; 9 to 11%, 35c. per lb.

Phosphorus.—Quotations current are 50@52 1/2c. per lb., New York or Philadelphia.

Platinum.—Prices are firm, without change, and quotations are $12.50@$13 per ounce, New York. The London quotation is steady at 47@48s. per ounce.

For chemical ware, best hammered metal, Messrs. Eimer & Amend, New York, furnish the following quotations, the prices given being respectively for orders of over 250 grams; for orders of over 100 grams and less than 250 grams, and for orders of less than 100 grams: Crucibles and dishes 46c., 47c and 48c per gram. Wire and foil are 43c., 44c. and 45c. per gram. The current retail price for crucibles is 60c. per gram.

Sodium.—In England makers' price is equal to 90@96c. per lb., according to quantity. Occasional sales only are reported here, usually on private terms.

Tungsten.—The following quotations for this metal and its compounds are furnished us by the manufacturers: Tungsten metal (powder) 98% pure, 70c. per lb.; tungstic acid, 45c. per lb.; tungsten salt (tungstate of soda), 30c. per lb. These quotations are for large lots. For ferro-tungsten the quotations for ton lots of the various grades are as follows: 60% metal 60c. per lb.; 50% alloy, 45c. per lb.; 37% alloy, 33c. per lb. There has been no recent change.

Imports and Exports of Metals.—Imports of metals into this port for the week ending December 5th, as reported by the New York Metal Exchange, were as follows: 35,705 boxes and 395 tons tin and black plates, 84 casks antimony, 358 tons spiegeleisen, and 136 tons ferro-manganese, from the United Kingdom; 645 tons spiegeleisen, 200 tons Straits tin, and 50 tons Banka tin from Holland; 500 tons spiegeleisen from Antwerp, and 20 tons manganese ore from Hamburg.

Exports of metals from this port for the week were 13 tons zinc skimmings to Bristol.

Arrivals at Baltimore for the week ending December 6th were: 11,658 tons iron ore from Cuba; 66 tons pig iron, 307 tons ferro manganese, and 1,389 boxes of tin and black plates from Liverpool.

Exports from Baltimore for the week ending December 13th, as reported by our special correspondent, were 36,515 lbs. tin scrap to Rotterdam.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, Dec. 13.

Heavy Chemicals.—There is little of interest to report of the heavy chemical market this week. Spot business is generally light, as is usual at this time of the year. Caustic soda is firm and slightly higher both here and abroad, as will be noted in our Liverpool letter. For alkali a fair demand for future delivery keeps up. The same may be said of bleaching powder. We quote: Caustic soda, 2·25@2·37 1/2c. for spot according to test; Carbonated soda ash, 48%, is ·90@1c., according to quantities and deliveries. Alkali is ·87 1/2@1·05c., according to test and package. Bleaching powder, $1.75@$2. Sal soda, 65@70c.

Acids.—A fair business at unchanged prices has been done during the week. The demand is principally for delivery next year, spot business being rather light. Our quotations per 100 lbs. in New York and vicinity, in lots of 50 carboys or over are as fol-

lows: Acetic acids (in barrels), $1.40@$1.70. Muriatic acid, 18°, 75@80c.; 20°, 80@90c. Nitric acid, 36°, $3.50 @$4; 40°, $4 @$4.50; 42°, $4.75@$4.25. Oxalic acid, $7.10@$7.60. Mixed acids, according to mixture. Sulphuric acid, 66°, 75@85c.; chamber acid, $6.50@ $7.25 per ton at factory. Blue vitriol is in demand, with sales at $3.90@$4.10 according to size of order.

Brimstone.—We quote for shipments, best unmixed seconds, $15.25@$15.50 Thirds are 25@50c. less. Spot or nearby is $16.50 for seconds.

Fertilizing Chemicals.—Very little business has been done in fertilizers this week. Only a few light sales are reported. Quotations are as follows: Sulphate of ammonia, gas liquor, $2.50@$2.55; bone, $2.40@$2.50. Dried blood, high grade, $1.85@$1.95; low grade, $1.60@$1.70 per unit. Azotine, $1.80@$1.90. Concentrated phosphate (30% available phosphoric acid), 70@71½c. per unit. Acid phosphate, 13% to 15%, av. P_2O_5, 57c. per unit at seller's works in bulk. Dissolved bone black, 17% to 18%, P_2O_5, 90@92c. per unit. Acidulated fish scrap, $12, and dried scrap with few or no sales, nominally $21 f. o. b. fish factory. Tankage, high grade, $19@$20; low grade, $18@$19. Bone tankage, $21; ground bone, $19@$20. Bone meal, $21 @$22.50.

In lots of 50 tons on contracts we quote, per 100 lbs.: Double manure salts, 48-53% (basis of 48%): New York, Boston and Montreal, $1.10; Philadelphia and Norfolk, $1.12½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.15. Sulphate of potash, 90%, and minimum, 96% respectively (basis of 90%): New York, Boston and Montreal, $2.08@ $2.10; Philadelphia and Norfolk, $2.10¼, Charleston, Savannah, Wilmington, N. C., and New Orleans, $2.13.

Muriate of Potash.—Quotations for lots of 50 tons are as follows: 80-85% and minimum 95%, respectively (basis of 80%): New York, Boston and Montreal, $1.78; Philadelphia and Norfolk, $1.80½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.83.

Kainit.—Prices for kainit (minimum 23%) are as follows for invoice and actual weights respectively: New York, Boston and Philadelphia, $8.80; Norfolk, $9.15; Charleston, Savannah, Wilmington, N. C., and New Orleans, $9.55.

Nitrate of Soda.—Quotations are: Spot, $1.75@ $1.80; shipments, $1.72½@1.80, according to position.

Liverpool. Dec. 4.

(Special Correspondence of Joseph P. Brunner & Co.)

The chemical market may be called quiet so far as new business is concerned, but at the same time stocks are light in most cases, and for some lines it is not easy to buy for prompt delivery.

Soda ash is very quiet, but Leblanc makes are scarce. There are some second-hand lots of ammonia ash offering, but the difficulty is to find any buyers. Nearest spot value for tierces is about: Leblanc ash, 48%, £4@£4 5s.; 58%, £4 5s.@£4 10s.; ammonia ash, 48%, £3 7s. 6d.@£3 12s. 6d.; 58%, £3 12s. 6d.@£3 17s. 6d. per ton, net cash. Bags, 5s. per ton less than tierces.

Soda crystals are dull at £2 7s. 6d.@£2 10s. per ton, less 5% for barrels, and 7s. less for bags.

Caustic soda is scarce on the spot and prices firm. Some of the makers outside the "Union" have advanced prices, being so full of orders. We quote spot range, 60%, £6 5s.@£6 10s.; 70%, £7 5s.@£7 10s.; 74%, £8 5s @£8 10s.; 76%, £9 5s.@£9 10s., per ton, net cash. Bleaching powder is in light supply and firm at £7 5s.@£7 10s. per ton, net cash, for hardwood packages, according to destination. Chlorate of potash has gone quieter again, and although markets are firm at 4½d. for any position, there are one or two odd resale parcels to be had for prompt delivery at 4¾d.

Bicarb. soda, only a moderate demand, at £6 15s. per ton, less 2½% for the fluest quality in 1 cwt. kegs, with usual allowances for larger packages. Sulphate of ammonia continues dull and rather easier at £9@£9 5s per ton, less 2½% for good gray, 24@25%, in double bags f. o. b. here, according to quality. Nitrate of soda, rather flat at about £7 17s. 6d.@£8 per ton, less 2½% for double bags f. o. b. here, according to quality and quantity. Carb. ammonia, lump, 3½d. per lb.; powdered, 3¾d. per lb. less 2½%.

MINING STOCKS.

Complete quotations will be found on pages 578 and 579 of mining stocks listed and dealt in at:

New York.	Aspen, Colo.	St. Louis.
Boston.	Colorado Springs.	Paris, France.
Philadelphia.	Duluth, Minn.	Mexico.
Baltimore.	Helena, Mont.	Shanghai, China.
Pittsburg.	Salt Lake, Utah.	Valparaiso, Chile.
Denver, Colo.	San Francisco.	London, England.

NEW YORK, Friday Evening, December 13.

There are as yet no signs of a mining stock boom in this city. Perhaps it is that the present list of the Consolidated Stock & Petroleum Exchange does not offer many inducements to the investor or the speculator; but it is a fact that the public shows but little more interest in mining stock trading here to-day than it did six months or a year ago.

Very little was done in the Comstocks during the week. Consolidated California & Virginia declined from $2.30 to $1.95, although only 200 shares were sold. Comstock Tunnel was quieter than usual, only 900 shares being sold at 7@8c. Of Hale & Norcross there were sales, 300 shares, at 95c.@1.05. Other sales were: 200 shares of Mexican at 45c.; 100 shares of Ophir at $1.50; 300 shares of Sierra Nevada at 68 @75c.; 100 shares of Union Consolidated at 60c.; 300 shares of Yellow Jacket at 27c., and 200 shares of Barcelona at 4@5c.

There was less than usual done in the Colorado stocks. Of Chrysolite there was a solitary transaction of 100 shares, at 27c. Of Breece 1,000 shares changed hands at 24@25c. Only 300 shares of Iron Silver were sold this week at 25c. Lacrosse was neglected, sales amounting to but 300 shares at 13c. Other sales of Colorado stocks were 700 shares of Leadville Consolidated at 13@14c., 300 shares of Little Chief at 23c., and 600 shares of Small Hopes at 90c.

Of the California stocks we note a sale of 100 shares of Brunswick Consolidated at 13c., and 240 shares of Standard Consolidated at $1.65@$1.75.

There were sales of 200 shares of Deadwood Terra at 80c., and 100 shares of Homestake at $30.50. Of Horn Silver 200 shares were sold at $2.25@$2.40, and of Ontario 100 shares at $8.75.

According to the official sales lists of the Stock Exchange and of the Consolidated, the total sales of Phœnix this week amounted to 2,200 shares at 7@10c.

Boston. Dec. 12.

(From Our Special Correspondent.)

The speculation in copper stocks continues largely to center in Boston & Montana, which, in spite of the decline in copper, has advanced the past week from $68¼ to $72¾, and closed to-day within 50c. of the highest price, at $72¼—sales over 25,000 shares. The rumor is that the company will declare quarterly dividends hereafter, and will make a full statement of its affairs at the February meeting.

Butte & Boston has ruled dull but firm, at $15¼ to $16. Calumet & Hecla recovered its dividend this week, selling up to $305, with a small lot touching $307 to-day. Quincy dull, at $124¼ to $125; the scrip is selling at $70.

Tamarack sold, ex-dividend, at $131, declined to $129, and recovered to $129½. The scrip sold at $68 to $70 The dealings in Kearsarge and Osceola were very light, the former sold at $14¼@$15 exdividend and the latter at $26½ to $27 dividend on.

Atlantic declined to $16 on small sales and Tamarack, Jr., sold at $15@$15¼ for small lots.

Tecumseh was active on a report that the mine had struck the rock it was looking for much sooner than was expected. The stock has been very quiet for some time, but orders to buy a block of it advanced the price to 3⅜, with 3¼ the last sale. About 1,500 shares were marketed. Wolverine was stronger this week and advanced from 6¼@7 on moderate transactions. Arnold was also in better demand and sold at $2, a gain of ¾ over last week.

Gold Stocks.—Boston & Cripple Creek was the active stock of this class, over 9,000 shares being sold at 37½@45c. Santa Ysabel sold in a small way at $11 and $10½. Gold Coin Mines sold from $1.15 to $1.05 for about 5,000 shares. Merced was active, with sales of about 2,050 shares from $27 to $33. Pioneer has been refused listing at the exchange for the present, its application being laid on the table. Quotations for the stock are nominal, from $2 to $4. The report for November just issued shows net earnings of $1,342.13 for the month.

Napa Quicksilver sold at 7½ to 7¼.

Cleveland. Dec. 12.

(From Our Special Correspondent.)

Iron ore mining stocks are beginning to show some feeble signs of life. For a year they have been dead, and prices had reached a level considerably lower than many of them had ever experienced before. At the slump, however, holders were not disposed to let go, believing that the depression was but temporary and that the time would come when lost values would be restored. Neither has there been any great indication shown by the outside public to jump in and buy bargains at the low levels. Consequently the market has been dull.

It still continues quiet, but interest is re-awakening to some degree. Inquires are being made about some of the stocks, not from local prospective buyers but principally from the outside, both from the East and from the West. A few sales have been made recently, but actual transactions have been neither large nor numerous.

The Republic paid a $1 dividend December 10th, making $3 for the year 1895, though not for the company year. The stock was selling a year ago at $5 50. Some negotiations are now pending at $13.

Much interest has been aroused in the stocks of the Lake Superior Consolidated Mining Company, controlled by John D. Rockefeller, by his recent venture into the vessel interests of the great lakes, and by the harmonious relations which apparently exist between that company and the Minnesota Iron Company, the two great producers of the Mesabi Range. The stock, however, is strongly held and is not on the market.

PRICES OF IRON MINING STOCKS AT CLEVELAND.

Name of Company.	Par val.	Dec. 12. Bid.	Ask.
Aurora	$25	.....	$8
Chandler	25	$37½	41
Cleveland-Cliffs Iron Co	100	38	42
Jackson Iron Co	25	....	70
Lake Superior Iron Co	25	30	32
Minnesota Iron Co	100	70	.....
Pittsburg and Lake Angeline	25	75	.....
Republic Iron Co	25	11½	13

Colorado Springs, Colo. Dec. 7.

(From Our Special Correspondent.)

The mining boom has continued and gives signs of a long life yet. All the exchanges are busy and all the brokers of repute have as much as they can attend to.

The Colorado Springs Mining Stock Exchange continues to prosper as it deserves, and as it will so long as its membership is what it is to-day. During the past week the total sales of listed stocks aggregated 1,150,500 shares, having a cash value of $495,402. The total sales of unlisted stocks were 2,487,883 shares. The Mining Stock Exchange is anxious to protect its patrons and neglects no measure to insure them against unwise investments. I learn from a prominent member that the International Trust Company has opened an office in Colorado Springs and will undertake the registration of stocks and will guarantee the legality of the certificates issued. Mr. Donaldson's recent visit to the East is bearing good fruit, as the increased inquiries from Eastern investors show.

The Board of Trade is not dropping behind in point of activity, and is not likely to, so long as it continues to be managed by the present officers. During the week the Board of Trade and Mining Exchange did a total business of 5,000,662 shares, of a cash value of $254,921.

The Consolidated Exchange continues to do an encouraging volume of business.

BY TELEGRAPH.

Messrs. Gardner & Co. wire us the closing quotations of the Colorado Springs Mining Stock Exchange for the week ending December 12th as follows:

Name of Company.	6	7	9	10	11	12
Alamo	.09	.09	.09½	09½	.09	09¼
Anaconda	.67	.68	.69	.71	.70¾	.71
Argentum-Juniata	.46	.48	.46	.44	.43	.44
Cripple Creek Con.	.25	.25	.24½	.24¼	.24	.24
Isabella	.47⅛	.45	44	.53	.53	.52
Mollie Gibson	.35	.35	.36	.35	.36	.36
Pharmacist	.14½	.15	.16¾	.16¼	.16	.14½
Portland	1.90	1.89	1.88	1.84	1.86	1.85
Summit	.15	.15	.25	.25	.25	.25
Union	.34½	.34½	.34½	.35½	.35¼	.34½
Work	.17½	.18	.18½	.19	.2¾	.20¾

Salt Lake City, Utah. Dec. 7.

(Special Report of James A. Pollock.)

The stock market this week exhibited a marked improvement over that of last, and there is no doubt but that the situation has greatly improved. The market is a good trading one, and is indeed remarkable at a season which is usually given up to adjustment rather than that of entertaining new ventures. The Mercur gold stocks will be the boom mining securities of 1896.

As was foretold would be the case, Ajax stiffened up materially, and some fair sales were made during the week with the bids advancing to 50c. There is not a great deal of floating stock. Alliance did practically nothing, although the market was not flooded with the security, holders being firm in faith. The company is still driving away on the vein, doing steady work. Preparations are being made to resume operations on the Old Massachusetts property. Gas was quiet with free offerings of the stock with no takers. Anchor continues along in the same old rut. The dispute between the minority and majority stockholders of the Bogan is about to be decided by the courts. It is hardly likely than many of the delinquents will pay their assessments under existing conditions. The stockholders of the Bullion Beck look for a Christmas present in shape of a dividend within the next ten days.

Centennial Eureka came to the front on the 2d inst., with an extra double dividend of $1 per share, or $50,000, completing a total of $1,440,000 to date. The regular dividends will be paid as usual on the 15th of the month. There are rumors of coming trouble in the Comstock, and very free offerings of the stock are being made by insiders. The property has been closed down, and it is questionable whether any work will be done in the near future. An assessment of 7½c. per share has been levied. No news of importance from Crescent. The expected shipment of ore from Dalton has not materialized as yet, but may do so any day now. The reports from the property confirm the previous good ones. Stock is holding firm around 17½ cents. Daly and Daly West continue in the same good old way. The mill on the latter is being rapidly completed, and both stocks are looked upon with favor by investors.

Horn Silver continues with heavy shipments of both high grade ores and concentrates. Quarterly dividend of $50,000 is expected on the 20th. There was probably more activity in Mammoth than in any other stock in the list. I have repeatedly called attention to its merits, and investors seem to be awakening to the fact. Heavy transactions were made during the week, and the price advanced until the close, which was at $1.25. The company is reported to be nearly out of debt and the resumption of dividends should not be very far distant. Mercur continues inactive, nothing definite having been heard from De Lamar relative to the sale. The experts have completed the examination and left for New York. There is absolutely no trading in the stock. Ontario is very dull. Development of ore bodies on the Rover continues in splendid shape, and the showing is becoming better daily. Considerable business was done in the stock. Silver King will pay its regular dividend of $37,500 to day. Splendid reports continue to come from the property.

Returns from the mill run at the Sunshine are being awaited with great interest. The management say there is no longer any question as to the successful operation of the plant and with this settled the stock becomes one of the best buys being offered. The assays of the mill tailings show no values, proving that the savings of gold is practically total.

San Francisco. Dec. 7.

(From Our Special Correspondent.)

The market opened rather heavily, and trading was at first light and prices had a downward tendency. Toward the middle of the week there was a recovery in quotations and higher prices, except for a few stocks. The improvement continued, and at the close to-day there is more activity than we have seen for several weeks.

Some closing quotations are: Consolidated California & Virginia, $2.20@$2.25; Ophir, $1 30@$1.40; Hale & Norcross, 92@93c.; Sierra Nevada, 67@68c.; Occidental, 85@87c.; Confidence, 75@77c.; Savage, 44@45c.; Belcher, 37@39c.; Crown Point, 31@32c.

Bodie Consolidated was actively dealt in and closes strong at 50@52c.; Bulwer is quoted 10@12c., and Mono, at 12@13c.

Sales at the regular sessions of the San Francisco Stock and Exchange Board for the month of November were the largest for the year, as will be seen by the following totals, as compared with last year:

	Shares.	
	1894.	1895.
January	240,410	254,315
February	224,750	196,770
March	264 890	286,530
April	463,805	262,810
May	781,2 5	271,030
June	329,955	234,645
July	178,300	185,395
August	281 945	229,850
September	250,405	333,245
October	424,420	249,460
November	278,680	352,675
Total	3,722,065	2,869,655

The following mining companies have filed sworn statements, showing cash on hand November 30, 1895; Alpha Consolidated, $9.265; Andes, $5,677; Alta, $6,043; Belcher, $7,786; Best & Belcher, $968; Belle Isle, $1,520; Bodie Consolidated, $14,256; Caledonia, $1,593; Consolidated California & Virginia, unsold bullion valued at $35,422, to offset an indebtedness of $22,408 at the Nevada Bank; Consolidated Imperial, $3,808; Consolidated New York, $493; Chollar, $2,250; Crown Point, $2,787; Church, $16,642; Challenge Consolidated, $529; Confidence, $1,453; Exchequer, $3,787; Gould & Curry, $1,321; Hale & Norcross, $5,158, with $5,000 due the Nevada Bank; Julia Consolidated, $684; Lady Washington $339; Ophir, $1,391; Occidental Consolidated, $2,716; Overman, $1,147; Mexican, $1,567; Mono, $1,672; Potosi, $23,580; Segregated Belcher, $6,060; Savage, $6,956; Sierra Nevada, $12,339; Silver Hill, $449; Standard Consolidated, $20,111; Syndicate, $1,078; Union Consolidated, $9,194; Utah Consolidated, $2,778; East Sierra Nevada, $29; Justice, $1,219; Kentuck Consolidated, $5,433; Scorpion, $32.

The Silver King Mining Company, of Arizona, reports having had an indebtedness of $5,719 on November 30th, 1895.

London. Nov. 30.

(From Our Special Correspondent.)

The slump in the mining stock market seems to have come to an end, at any rate for the present, and things will gradually improve unless the irresponsible bulls come along again. The settlement which took place this week has been one of the quietest on record; hardly any carrying over had to be arranged for, and shares were taken up by those who can afford to pay for them and wait patiently. Every day during the past week the market has strengthened a little, and as a rule quotations are slightly higher. The most noticeable rise is in British South Africas, caused by extensive dealing in options, though some have it that it is caused by the rumor that the territory belonging to the company is to be taken over by the Cape Government. This rumor does not appear to have any substantial foundation.

Of other sections of the mining market the Indian Department has been noticeable by its steadiness and the readiness of buyers to take whatever is offered. In the Australian department the demand for Broken Hill proprietory has been a feature, the quotation having risen to £2 10s., chiefly on the prospects of the solution of the sulphide problem. At the statutory meeting of the Smelting Company of Australia, held this week, nothing new of importance was made known that was not in the prospectus, but the commercial value of the Siemens process for electrolytically depositing zinc in a merchantable form, was discussed and explained pretty fully by the representatives of the patentee. Though nothing of very great importance was said, the meeting had a reflex action in stirring up Broken Hills and other shares dependent on the solution of the sulphide problem.

In the American department much attention has been attracted by Mr. Hamilton Smith's report on the Anaconda property, which has been widely published by the Exploration Company this week. It is not necessary to go into this report here, as you will receive the full text for treatment in another column. The effect of the report on the American market has been excellent, and it has drawn general attention to the fact that good American properties are now the chief object of the Exploration Company. It is reported that the Exploration Company has an exploring party in Kootenay, B. C., which was organized by Mr. Hamilton Smith during his recent visit to America.

Cripple Creek is being kept to the front by several promoting parties by means of the publication of telegrams in the papers and by means of correspondence of a polemical character specially got up for the occasion. The news and correspondence thus published gives no information at all, but only serves to keep the name of Cripple Creek before the public and to boom it in a small way. I do not think that any real boom will come along before the Exploration Company brings forward its properties, as the syndicates now working are not influential enough or of sufficiently high standing. The latest syndicate in the field is the London Mining Investment Corporation, which is about to introduce some Cripple Creek properties to the shareholders in some of the companies previously floated by the corporation, but details are not yet obtainable.

Paris. Dec. 1.

(From Our Special Correspondent.)

Our market continues in a very uncertain condition. It is by no means certain that we may not see a further fall in South African shares, and there are signs that holders are getting frightened. This and the Turkish break are depressing everything.

The strongest point in the market has been found in the copper stocks, which have held their own remarkably well considering the general uncertainty and the lower prices of the metal. The latter have had but little effect, however, since most dealers look for an improvement.

I must say that there has been but little activity, and people seem inclined to let the stock market alone altogether until matters are a little more settled. The fluctuations reported from day to day have been generally on small transactions.

The special commission on the Algerian phosphate concessions has made a report, the result of which will probably be that a compensation will be paid the dispossessed British companies for their plant and work done, and a judical inquiry will be made into the conduct of the local authorities in making the original grants.

Our wise men of the press, with M. Paul Leroy-Beaulieu at their head, are trying to reassure investors and to convince them that the best thing they can do is to hold their gold mining stocks, and not to be alarmed by the fact that values seem to have settled down to a permanently lower basis. M. Leroy-Beaulieu, indeed, is disposed to recommend mining stocks as an investment, provided good judgment is exercised in buying. I am inclined to think that he is right, since I have always believed in the profitableness of legitimate mining enterprises, and have known many notable instances of success therein. Even now the trouble has not been with the Transvaal mines themselves, but with the great speculation which has used them as a base of operations.

We hear more definite news from Berlin with relation to the reported new Chinese loan. It is to be for 300,000,000 marks, and one of the conditions is that the orders for railroad material and war material, which the Chinese government promises, are to be placed with German firms. It appears that this loan is not to pay indemnity, but to make improvements and generally to put China in a better fighting condition. It is said that Russia consents to the loan.

The movement of bullion and specie in France for the ten months ending October 31st was as follows:

	Imports. Francs.	Exports. Francs.	Excess. Francs.
Gold	233,538,502	171,853,947	I. 61,684,555
Silver	99,955,998	57,439,467	I. 42,517,531
Copper and nickel coins	57,600	1,934,100	E. 1,876,500
Total	333,553,100	231,227,514	I.102,325,586

Imports of gold, as compared with 1894, showed a decrease of 16%, while exports were more than double those of last year. In silver there was a considerable increase in imports and a decrease in exports. The movement of copper and nickel coins was considerable.

Our political outlook still continues very uncertain, and the Turkish question is going to be a weight on the market for some time to come. If your noisy politicians who talk so loudly of war only knew what burdens we have to carry they would be silent. That is, perhaps; but they seem to be of the class of demagogues who do not care for anything, so long as they are permitted to make a noise.

AZOTE.

MEETINGS.

American Coal Company, annual meeting at the office, No. 1, Broadway, New York City, December 26th, between 12 and 1 p. m. Transfer books close December 16th at 3 p. m., and reopen December 27th.

Andes Silver Mining Company, annual meeting at the office, No. 309 Montgomery street, San Francisco, December 18th, at 1 p. m.

Mancos Placer Mining Company, special stockholders' meeting at the office, 701 Boston Building, Denver, Colo., December 24th, at 11 a.m. The object of this meeting is to elect a board of directors who are to make sale of all the property of the company at such terms as may be decided upon.

Mt. Diablo Mill and Mining Company, annual meeting at the office, No. 328 Pine street, San Francisco, December 16th, at 1 p. m.

Ophir Silver Mining Company, annual meeting at the office, No. 309 Montgomery street, San Francisco, December 18th, at 1 p. m.

DIVIDENDS.

F. E. Belden Mica Mining Company, 40th regular monthly dividend of 4c. per share ($4,000), payable Dec. 16th.

Victor Gold Mining Company, dividend of 10c. ($20,000), payable December 16th, at the office in New York.

ASSESSMENTS.

Name of Co.	Loc'n.	No.	Dinq.	Sale.	Amt.
Anna	S. D.	4	Dec. 10	Dec. 30	.005
Atlas	"	9	" 7	" 26	001
Best & Belcher	Nev.	59	" 9	" 30	.25
Bullion	"	46	" 9	" 30	.10
Bulwer Con	Cal	11	" 4	" 31	.05
Butte & Best	Mont.		Jan. 10	Feb. 3	.00¾
California	Cal.	9	Dec. 3	Dec. 21	.01
Chollar	Nev.	41	" 17	Jan. 7	.25
Cinnabar King	Cal		" 28		.01
Confidence	Nev.	26	" 18	Jan. 8	.30
Con. Cal. & Va.	"	5	" 28	" 16	.25
Emmett	S. D.	10	" 13	Dec. 31	.02
Exchequer	Nev.	38	Nov. 25	" 19	.05
Gold Bar Con	Cal.	2	Dec. 21	Jan. 16	.03
Gold Valley	"	2	" 16	" 2	.10
Gould & Curry	"	77	" 10	Dec. 30	.05
Granite Hill	"	12	" 4	Jan. 8	.10
Iowa	Nev.	21	Nov. 26	Dec. 16	.05
Jackson	"	15	" 25	" 24	.25
Jamison	Cal.	7	Dec. 16	Jan. 6	.02
Jones	Utah.		" 14	" 11	.00¼
Mexican	Nev.	53	" 23	" 14	.25
Montreal	Utah.		" 17	" 2	.00¼
No. Banner Con.	Cal.	37	" 9	Dec. 30	.03
Ophir	Nev.	67	" 9	" 30	.25
Overman	"	74	Jan. 6	Jan. 27	.10
Superior	Cal.	1	Dec. 9	" 30	.05
Teresa	Mex.	16	" 17	" 4	.05
Tetro	Utah.	2	" 21	Feb. 1	.01
Troy	"	8	" 21	Jan. 11	.20
Yellow Jacket	Nev.	60	" 17	" 22	.25

DIVIDENDS PAID BY MINING COMPANIES, NOVEMBER AND YEAR 1895.

Name of Company.	Location.	Paid in November.	Paid in since Jan. 1.
Adams	Colo.		$6,000
Ætna Con	Cal.		10,000
Am. Dev. & Mg. Co.	Mont.		24,340
Alaska-Mexican	Alaska.		51,000
Alaska Treadwell	"		225,000
Amethyst	Colo.		36,000
Argentum-Juniata	"	$39,000	195,000
Bald Butte	Mont.		12,500
Bangkok-Cora Belle	Colo.	3,000	56,000
Belden, F. E. Mica	N. H.	4,000	42,000
Boston & Montana	Mont.	750,000	1,050,000
Bullion-Beck & Champion	Utah.		325,000
Calumet & Hecla	Mich.		1,500,000
Centennial-Eureka	Utah.	60,000	390,000
Champion	Cal.		27,200
Church	"	5,000	5,000
Con. Cal & Va	Nev.		162,000
Copper Queen Con	Ariz.		150,000
Coptis	Nev		1,000
De Lamar	Idaho.		540,000
Elkhorn	Mont.		50,000
Forepaugh	Colo.		16,000
Gold & Globe	"		11,250
Golden Fleece	"	20,000	172,000
Hecla Con	Mont.		115,000
Highland	So. Dak.	25,000	25,000
Homestake	" "	31,250	312,500
Hope of St. Louis	Mont.		10,000
Horn Silver	Utah		100,000
Iron Mountain	Mont.	10,000	100,000
Jackson	Cal.		2,000
Kennedy	"		184,000
Le Roi	B. C.		25,000
Mayflower Gravel	Cal		48,000
Mercur	Utah		200,000
Mollie Gibson	Colo.		50,000
Montana, Ltd	Mont.		102,300
Mont. Ore Purchasing Co.	"	40,000	160,000
Moose	Colo.	6,000	66,000
Morning Star Drift	Cal.		153,600
Moulton	Mont.		30,000
Mt. Rosa	Colo.		5,000
Napa Con. (Quicksilver)	Cal.		90,000
Nugget	Colo.		5,000
Osceola Con	Mich.		100,000
Portland	Colo.	60,000	660,000
Quincy	Mich.		600,000
Silver King	Utah.	25,000	212,500
Smuggler	Colo		350,000
St. Joseph (Lead)	Mo		37,500
Standard	Cal.		20,000
Tamarack	Mich.		200,000
Temonj	Colo		10,000
Tom Boy	"		200,000
Union	"		12,500
Utah	Utah.	2,000	17,000
Victor	Colo.	20,000	220,000
Victor L. & M. Co.	"		9,000
War Eagle	B. C.		132,500
W. Y. O. D.	Cal.		24,000
Totals		$1,100,000	$9,645,690

Readers of the "Engineering and Mining Journal" will confer a favor on the publishers if they will notify the "Journal" of any errors or omissions in the above table.

STOCK QUOTATIONS.

COLORADO SPRINGS COLO.*

NAME OF COMPANY.‡	Par val	Dec. 3 H.	Dec. 3 L.	Dec. 4. H.	Dec. 4 L.	Dec. 5. H.	Dec. 5. L.	Dec 6. H.	Dec 6. L.	Dec. 7. H.	Dec. 7. L.	Dec. 9. r.	Dec. 9. A.	Sales.
Alamo	$1	.09½	.....	.09½	.09¾	.09½	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	.09¾	32,100
Anaconda	5	.70	.68½	.68	.....	.68¾	.68	.69	.67	.68½	.64	.....	.....	17,100
Argentum J	2	.45	.....	.45½	.45	.45	.....	.46	.45	.47½	.....	.45	.....	3,200
Bob Lee	1	.03	.02¾	.03¼	.03	.03¾	.03	.03¼	.....	.03¼	.03	.24¾	.24	63,000
Cr. & C. C.	1	.07¾	.....	.07¾	.....	.07¾	.07¾	.07¾	.....	.07¾	.....	.07¾	.07¼	18,700
Cripple C.C.	1	.22½	.21	.22¾	.21½	.23¾	.24	.25¾	.24¾	.25	.....	.....	.....	69,200
Cr.Creek Ex	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Croesus	1	.02½	.....	.02¾	.02¾	.02¾	.....	.03	.02¾	.03	.02¾	.02¾	.02¾	62,500
Fanny R	1	.18¾	.17¾	.17	.....	.17½	.17	.....	.....	.....	.....	.15¾	.11¾	24,000
Favorite	1	.12½	.11¾	.12¾	.....	.12¾	.....	.13¼	.14	.13¾	.13½	.14	.13½	44,000
Franklin	1	.03½	.02¾	.03¾	.....	.02¾	.02¾	.03	.02¾	.03	.....	.02¾	.....	42,500
Gold Fleece	1	.....	.....	1.34	1.30	1.35	.....	1.35	.....	1.35	.....	1.35	1.35	16,000
Gold & Gl.	1	.25	.....	.25	.24½	.25	.24½	.....	.....	.24	.....	.....	.....	8,500
Good Hope	1	.02½	.....	.....	.....	.02¾	.....	.02¾	.....	.02½	.....	.02¾	.02½	13,900
Ida May	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Isabella	1	.50	.45	.49¾	.47	.50	.49	.49	.47¾	.48	.40	.49	.39	31,307
Marion	1	.....	.....	.....	.....	.....	.....	.02	.....	.....	.....	.01¾	.....	25,500
Mollie Gib	5	.39	.....	.39	.....	.40	.....	.37	.34	.35	.....	.37	.36	2,800
Mt. Rosa	1	.19	.18	.20¾	.20	.20¾	.....	.20¼	.....	.....	.....	.19	.18¾	13,600
Matao	1	.22¼	.22	.21¾	.21¼	.22	.21½	.22¼	.....	.....	.....	.21	.23½	14,500
Orial	1	.....	.....	.....	.....	.....	.....	.05¼	.05	.05¾	.05	.05¾	.05	35,000
Pharmacist	1	.14¾	.....	.15¼	.15½	.....	.....	.14¾	.14½	.....	.....	.14	.17¼	33,500
Portland	1	1.90¾	1.95	1.96	.....	1.96	.....	1.93	1.90	.....	.....	1 87½	.....	2,800
Rubicon	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Specimen	1	.16¼	.16	.....	.....	.17½	.16¼	.16¼	.....	.16¾	.....	.16½	.16¾	15,000
Summit	1	.24¾	.....	.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,500
Union	1	.29	.28¾	.29¾	.29	.35½	.30	.34½	.31	.35	.33	.35¼	.35	104,500
Work	1	.16	.15½	.15¾	.....	.17	.15¾	.17¾	.16¾	.18	.17	.18¾	.18	91,700

* Official quotations Colorado Springs Mining Stock Association ‡ All the companies are located in Colorado. Total sales: listed, 1,681,400; unlisted, 2,337,550. Value, listed, $182,833.47.

COLORADO SPRINGS, COLO.*

NAME OF COMPANY.*	Par val	Dec. 3. B.	Dec. 3. A.	Dec. 4. B	Dec. 4. A.	Dec. 5. B.	Dec. 5. A.	Dec. 6. B.	Dec. 6. A.	Dec. 7. B.	Dec. 7. A.	Dec. 9. B.	Dec. 9. A.	Sales
Alamo	$1	.....	.....	.09¼	.10	.09¼	.09½	.09½	.10	.09¾	.09¾	.09¾	.10	30,900
Anaconda	5	.65	.70	.67	.70	.67	.69	.68	.65	.65½	.70	.58	.70	4,400
Anchoria-L	1	2.00	2.50	2.00	3.00	2.25	3.00	.....	2.75	2.00	3.00	2.85	.....	25,050
Aola	1	.04½	.04¾	.04¼	.04¾	.04¼	.04½	.04¾	.04¾	.....	.....	.04¾	.04½	2,400
Arg'ntumJ	2	.....	.....	.46	.49	.....	.....	.....	.....	.....	.....	4	47	300
Bankers	1	.20¾	.20¾	.21	.21½	.22½	.23¼	.23	.21	.23½	.24½	.23	.24	117,500
Ben Har	1	.12¼	.12½	.....	.10¾	.09¾	.10	.10¼	.09¾	.09½	.10	.09¾	.10	60,500
Blue Bell	1	.10	.10¾	.10	.11¾	.07¾	.....	.12	.14	.13¾	.13¾	.13¾	.13¾	33,510
Bob Lee	1	.02¾	.02¾	.03	.03¾	.....	.03	.03¼	.03¾	.03¾	.13¾	.03	.03¼	76,000
Buckhorn	1	.06¾	.07	.06¾	.06¾	.....	.06¾	.06¾	.06¾	.16¾	.06¾	.07	.01¾	42,000
Ch'mpaig'e	1	.011	.011¾	.01	.010¾	.008	.012	.009	.011	.0 9	.01	.00¾	.01	74,000
C. K. & N	1	.01¾	.02	.01¾	.02	.01¼	.01¾	.01¾	.01¾	.01¾	.02	.01½	.01¾	13,000
Colo.C.& M.	1	.07¾	.08	.08¼	.08¾	.07¼	.08	.07½	.07¾	.17	.....	.7¾	.07¼	462,500
Columbine	1	.06¾	.07	.06¼	.....	.06¾	.06¾	.....	.....	.06	.06¾	.05¾	.06	21,000
Copper M	1	.02¾	.02¾	.02¾	.02¾	.02¾	.0 5	.02½	.03	.02¾	.02¾	.02¾	.03	70,000
C. C. Con.	1	.22	.22¼	.2	.22¼	.21½	.24¾	.24	.24¾	.23¾	.24½	.24¾	.24¾	54,000
Cr. & C. C.	1	.07	.08	.07½	.08	.08	.08¾	.07¾	.08	.7¾	.....	.01¾	.07¾	72,500
Defender	1	.01¾	.01¾	.01¾	.01¾	.....	.....	.01¾	.01¾	.01¾	.01¾	.....	.01¾	187,000
Des Moines	1	.05¾	.06¼	.06¾	.07¾	.07¼	.07¾	.....	.07¾	.06	.07¾	.06¼	.07¾	65,625
Enterprise	1	.19	.22	.2	.21¾	.0	.....	.30	.31	.21	.28½	.22	.26¾	21,400
Eureka	1	.1	.2	.02	.2	.02	.02¼	.02	.02¾	.02	.02¾	.01¾	.02	191,000
Fanny R	1	.18	.19¼	.16¾	.17	.17¼	.17¾	.17¼	.18¼	.17¾	.18¾	.14¾	.14¼	175,200
Favorite	1	.12	.....	.....	.....	.....	.....	.....	.13¼	.13	.....	.12½	.15	3,400
Franklin	1	.02¾	.03	.02¾	.02¾	.02¾	.3	.02¾	.0 3	.02¾	.02¾	.....	.....	32,000
Garfield-Gr	1	.06¼	.06¼	.....	.06¾	.06¼	.06¾	.....	.....	.06¾	.06¼	.06¼	.07	58,500
Gold & Gl	1	.....	.25½	.24½	.25¼	.24¾	.25	.24	.....	.25	.25¼	.25½	.27	15,000
Gold Eagle	1	.02¾	.03	.02¾	.03	.0 3	.03¼	.03	.03¾	.....	.03¼	.03	.03¼	73,650
Gold. Age	1	.04¾	.04¾	.04¾	.04¾	.03¾	.04¾	.04¾	.04¾	.....	.04¾	.04¾	.04¾	7,000
Gold King	1	.60	.67½	.....	.....	.60	.68	.60	.68	.60	.65	.....	.65	1,000
Gold Res	1	.....	.....	.00¾	.005	.0 4½	.....	.004	.006	.....	.00¾	.....	.....	1,600
Gold Stand	1	.12	.13¾	.12½	.13	12	.12½	.12¾	.13	.12¾	.13	.12½	.....	132,000
Goldstone	1	.02¾	.2¼	.02¾	.02¼	.2¾	.02¾	.2¾	.2¼	.0 3¼	.02¾	.02¼	.02¾	168,500
Gould	1	.17	.17½	.17¼	.18	.17½	.17¾	.18¾	.....	.18¾	.20	.....	.20	14,500
Gran. Hill	1	.02¾	.02¼	.02	.02¾	.....	.....	.02	.2¼	.02	.02¼	.02	.....	7,500
Henrietta	1	.0 3	.014	.014¾	.015	.013	.014	.014	.014¾	.....	.014	.014	.....	72,000
Isabella	1	.49¼	.49¾	.49¾	.49¾	.49¼	.49¾	.47½	.48¾	.47½	.48¼	.....	.45¾	34,400
do.stamp	1	.47¾	.50	.44	.....	.....	.51	.....	.....	.....	.....	.....	.....	3,000
Jack Pot	1	.13¾	.13¾	.12	.13¾	.12½	.13	.12¾	.....	.12¾	.13	.12¾	.13	16,725
Jefferson	1	.13¾	.14¼	.12	.14¼	.14	.14¼	.14¼	.14½	.15	.16	.15¾	16	79,592
Keystone	1	.10	.10¼	.09¾	.10	.....	.1 3¾	.09¾	.10¼	.10¼	.10¾	.10	.10¼	24,000
Ladessa	1	.02¾	.02¾	.02¼	.02¾	.02½	.02¼	.02	.02¾	.02¾	.02¾	.02	.02¼	114,000
Maggie R	1	.....	.01	.008	.....	.009	.....	.009	.009¾	.....	.....	.009	.0095	65,000
Magna Ch	1	.03¾	.03¼	.03	.03¼	.03¾	.03¾	.03	.3¾	.03¼	.03¾	.....	.03¾	28,000
Mollie G	1	.40	.41	.40	42	40½	.....	40	.41	36	40	.35	.39	.....
Mt. Rosa	1	.18¾	.20	.....	.....	.18¾	.21	.18½	.19	.....	.21	.....	.20¾	1,000
Mutual	1	.08¾	.09¼	.08¾	.....	.08¼	.09	.08¾	.0 9¼	.....	.08¾	.08¾	.08¾	20,000
Nugget	5	.....	.....	.14¾	.15¾	.14¾	.15¼	.15½	.16¼	.....	.....	15	.15¾	1,500
Ontario	1	.01	.0115	.01¼	.....	.01¾	.012	.012½	.013	.0113¾	.0118¾	.....	.011¾	110,000
Ophir	1	.10¼	.1 3¾	.09¾	.10	.09¾	.10	.....	.10	.10¼	.15¾	10	6,000	
OrphanBell	1	.13	.13¾	.....	.14	.13¾	.14¾	.....	.....	.18¾	.....	.13	.13¼	8,100
Pappoose	1	.06	.06¾	.05	.06¼	.05¾	.6	.06¾	.06¾	.06¾	.06¾	.08	.08¾	200,000
Pharmacist	1	.14	.15¾	.14¾	.13½	.14¾	.14¾	.14¾	.15¼	.14¾	.16¼	.16¾	.16¼	55,600
Portland	1	.....	2.02	1.93	2.00	.....	.....	1.90	.....	1.93	.....	1.85	1.90	40
Princess E.	1	.....	.0105	.....	.0095	.0 9	.0 9¼	.0095	.0105	.....	.....	.01	.0105	299,000
Propos'ti'n	1	.0 8¾	.08¾	.009¾	.0 9	.008¾	.009¾	.0 8¾	.009	.0085	.009¾	.....	.008	32,000
Reno	1	.07¾	.07¾	.0 4	.09	.07½	.....	.07¾	.....	.07¼	.....	.09½	.....	7,500
Red Bird	1	.02¾	.03	.02¾	.03	.0 3¾	.03	.0 3¾	.03	.12½	.03	.02½	.02¾	70,500
Sacram'nto	1	.....	.08¾	.....	.09	.0 9¾	.09	.....	.09	.09¾	.09	.09	.....	62,000
Santa Fe	1	.013¾	.....	.014	.....	.....	.013¾	.....	.....	.....	.013¾	.....	.013½	35,000
Security	1	.009	.010¾	.....	.0 03¾	.01	.010¾	.01	.....	.01	.01 5	.011¾	.011¾	8,000
Silv. State	1	.02¾	.02½	.02¾	.02¾	.02¾	.02¾	.02¾	.03	.02½	.03¼	.02¾	.02½	63,000
Star of W	1	.02	.02¼	.02¾	.02¼	.02	.02¼	.12¾	.2¼	.02	.02¼	.....	.02¾	12,000
St.L. & C.C	1	.....	.04¾	.04¾	.04¾	.04	.....	.04¾	.04¾	.....	.04¾	.04¾	.04¾	16,800
Summit	1	.....	.26	.....	.27	.....	.....	.....	.....	.....	.....	.....	.26	.....
Temonj	1	.16	.16¼	.15	.16¾	.....	.16¼	.15	.....	.....	.15¾	.16¼	.....	27,000
T F. T	1	.03¾	.....	.03	.03¾	.03¼	.03¾	.03¾	.....	.....	.....	.....	.04	2,000
Union	1	29	.29¾	.29¾	.29¾	.32½	.32½	33	.....	.....	.34½	.....	.35	.35¼	250,800
UnionLeas.	1	.....	.35	.....	.35	.....	.35	.....	.....	.35	.....	.....	.....	.....
Virginia M.	1	.03¼	.03¾	.03¼	.03¼	.03	.03¾	.03¼	.3¼	.03¼	.03¼	.03¼	.03¼	36,000
Wh. of For.	1	.009¾	.01	.0095	.0105	.0 9½	.01	.....	.0109¾	.009	.01	.....	.01	22,000
Work	1	.....	.....	15	.15½	.14¾	.15	.16	.20	.17½	.19	.18¾	.....	18,430

*Official quotations Colo. Springs Board of Trade & Mg. Exch. Total shares sold: Listed, 4,631,082 Sales for the week ending November 30th at the New Consolidated Exchange aggregated 4,442,834 shares.

SAN FRANCISCO, CAL.*

NAME OF COMPANY.	Location.	Par. value.	Dec. 7.	Dec. 9.	Dec. 10.	Dec. 11.	Dec. 12.	Dec. 13.
Alta	Nev.	100	.15	.15	.13	.13	.10	.....
Belcher	"	100	.38	.35	.32	.31	.27	.....
Best & Belcher	"	100	.87	.83	.83	.81	.79	.79
Bodie Consolidated	Cal.	100	.52	.54	.53	.46	.39	.35
Bulwer	"	100	.....	.12	.13	.11	.09	.13
Challar	Nev.	100	.29	.29	.28	.24	.21	.20
Con. California & Virginia	"	100	2.20	2.20	2.20	2.20	2.10	2.15
Crown Point	"	100	.32	.28	.28	.27	.26	.....
Gould & Curry	"	100	.45	.45	.42	.43	40	.39
Hale & Norcross	"	100	.90	.90	91	.88	.81	.80
Mexican	"	100	.40	.38	39	.36	.33	.30
Mono	Cal.	100	.....	.12	.12	.11	.09	.06
Ophir	Nev.	100	1 35	1.30	1.30	1. 0	1.25	1.30
Potosi	"	100	.63	.66	.60	.5	.54	.....
Savage	"	100	.43	.42	.42	.38	.30	.30
Sierra Nevada	"	100	.65	.65	.64	.64	.56	.57
Union Consolidated	"	100	.52	.54	.52	.49	.47	.47
Utah	"	100	.06	.6	.06	.06	.04	.....
Yellow Jacket	"	100	.23	.25	.21	.20	.18	.17

* Official telegraphic quotations San Francisco Stock Exchange.

BALTIMORE, MD.* Week ending Dec. 12.

NAME OF COMPANY.	Location.	Par value.	Bid.	Ask.	NAME OF COMPANY.	Location.	Par value	Bid.	Ask.
Balt. Mg. & Sm.Co	N. C...	5	.....	.....	Howard C'l & Coke	Md.....	5	.....	.....
Conrad Hill	" ...	10	.....	.....	Lake Chrome	" ...	5	.....	.....
Con. Coal	Md.....	100	31	.....	Ore Knob	"	10	.....	.....
George's Cr'k Coal	" ..	100	108¼	115	Silver Valley	. C...	5	.....	20

* Official quotations Baltimore Stock Exchange.

NEW YORK.*

NAME OF COMPANY.	Location.	Par val.	Dec. 7. H.	Dec. 7. L.	Dec. 9. H.	Dec. 9. L.	Dec. 10. H.	Dec. 10. L.	Dec. 11. H.	Dec. 11. L.	Dec. 12. H.	Dec. 12. L.	Dec. 13. H.	Dec. 13. L.	Sales
Alice	Mont.	25	.....	.....	.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Argentum Jun.	Colo.	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
American Flag	"	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barcelona	Nev.	5	.....	.....	.....	.....	.05	.....	.....	.04	.....	.....	.....	.....	200
Bodie Con.	Cal.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belcher	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Best & Belcher	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Breece	Colo.	25	.....	.....	.....	.....	.....	.....	.25	.24	.....	.....	.....	.....	1,000
Brunswick	Cal.	2	.....	.....	.....	.....	.....	.....	.13	.....	.....	.....	.....	.....	100
Castle Creek	Idaho	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chrysolite	Colo.	50	.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Comstock T	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.08	.07	900
do. bonds	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Con. Imperial	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Con. Cal. & Va	"	100	2.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.95	.....	200
Creede & C. C	Colo.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crown Point	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Daly	Utah.	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Deadwood Terr.	S.Dak	25	.....	.....	.....	.....	.80	.....	.....	.....	.....	.....	.....	.....	200
Enterprise	Colo.	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gould & Curry	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hale & Norcross	"	100	.95	.....	1.05	.....	.....	.....	.95	.....	.....	.....	.....	.....	300
Homestake	S. Dak	100	.....	.....	30.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	600
Horn Silver	Utah.	25	.....	.....	2.35	.....	2.40	.....	.....	.....	.....	.....	.....	.....	200
Iron Silver	Colo.	20	.....	.....	.....	.....	.25	.....	.....	.....	.....	.....	.....	.....	300
Isabella	"	1	.50	.....	.....	.....	.....	.....	.....	.5	.....	.....	.....	.....	500
K. & Pembroke	Ont..	10	.....	.....	.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	110
Lacrosse	Colo.	10	.13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	300
Leadville Con	"	10	.13	.....	.....	.....	13	.....	.14	.....	.....	.....	.....	.....	700
Little Chief	"	5	.23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	300
Mexican	Nev	100	.....	.....	.....	.....	.....	.....	.45	.....	.....	.....	.45	.....	200
Mollie Gibson	Colo.	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ontario	Utah.	100	8.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Ophir	Nev	100	.....	.....	1.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Phœnix Con	Ariz	1	.....	.....	...	.....	.08	.....	09	.07	09	.....	.10	.08	2,200
Plymouth	Cal.	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Potosi	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Q'cksilver	Cal.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
do. pref.	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Savage	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sierra Nevada	"	100	.....	.....	.75	.....	.....	.....	.68	.....	.....	.....	.....	.....	300
Small Hopes	Colo.	25	.....	.....	.....	.....	.90	.....	.90	.....	.....	.....	.....	.....	600
Standard Con	Cal.	100	.....	.....	1.75	.....	.....	.....	1.65	.....	.....	.....	.....	.....	240
Union Con	Nev.	100	.....	.....	.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Victor	Colo.	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yellow Jacket	Nev.	100	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	300

*Official quotations N. Y. Stock and Con. Stock & Petroleum Exchanges. Total sales, 9,650.

BOSTON, MASS.*

NAME OF COMPANY.	Location.	Par val.	Dec. 6. H.	Dec. 6. L.	Dec. 7. H.	Dec. 7. L.	Dec. 9. H.	Dec. 9. L.	Dec 10. H.	Dec 10. L.	Dec. 11. H.	Dec. 11. L.	Dec. 12. H.	Dec. 12. L.	Sales.
Allouez	Mich.	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arnold	"	25	.....	.....	.....	.....	1.38	.....	1.50	.....	2. 0	1 63	2.00	.....	1,300
Atlantic	"	25	16.50	.....	16.50	.....	16.00	.....	.....	.....	16.00	.....	.....	.....	135
Bonanza	"	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bost. & C. C	Colo.	1	.43	.....	.43	.38	.50	.45	.45	.43	.43	.38	.45	.....	3,225
Bost. & Mont.	Mont.	25	70.50	68.50	70.50	69 25	70.75	69.00	70.75	70.00	72. 0	70.75	72.75	70.88	25,044
Butte & Bost	"	25	15.88	15 38	16.00	15.38	15.25	15.13	15 25	.....	15.75	15.00	15.50	15.00	1,303
Cal. & Hecla	Mich.	25	.....	.....	300	.....	304	.....	305	.....	305	.....	304	.....	21
Catalpa (Silver)	Colo.	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Centennial	Mich.	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dominion Coal	N. S.	100	14.50	.....	.....	.....	13.25	.....	14.00	13.25	.....	.....	.....	.....	375
do. pref	"	100	94.00	.....	.....	.....	94.00	.....	94.00	.....	93.50	.....	94.00	.....	139
Franklin	Mich.	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Illinois Steel	Ill.	100	73.00	.....	73 00	.....	70.00	.....	72.25	69 50	.....	.....	39.38	.....	779
Gold Coin	Colo.	1	1.15	1.05	1 10	.....	1.10	1.05	1.05	.....	.....	.....	.....	.....	4,020
Kearsarge	Mich.	25	16.00	.....	.....	.....	.....	.....	15.00	.....	14 88	.....	15.00	.....	250
Lake Sup. Iron	"	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Merced	Cal.	15	28.00	27.00	27.25	.....	31.00	27.50	31.50	31.00	34.00	32.50	33.00	32 25	2,070
Minnesota (Gr.)	Minn.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Napa	Cal ..	7	.....	.....	.....	.....	.....	.....	.....	.....	7.50	7.25	.....	.....	200
National	Mich.	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Osceola	"	25	26.75	26.50	27.00	26 50	26.75	.....	.....	.....	25.50	.....	.....	.....	160
Pontiac	"	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	"	25	124	.....	124½	.....	.....	.....	125	.....	.....	.....	125	.....	146
do. scrip	"	.....	.....	.....	.....	.....	.....	.....	70.00	.....	.....	.....	70.00	.....	10
Santa Rosa	C'l...	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
San. Ysabel (G.	"	5	.....	.....	.....	.....	.....	.....	11.00	.....	10.50	.....	.....	.....	20
Tamarack	Mich	25	.....	.....	.....	.....	131	.....	.....	.....	130	129	129½	.....	163
do. scrip	"	.....	.....	.....	.....	.....	.....	.....	70.00	.....	.....	.....	71.00	68.00	154
Tamarack, Jr.	"	25	.....	.....	.....	.....	15.00	.....	15 25	.....	.....	.....	15.00	.....	80
Tecumseh	"	25	.....	.....	.....	.....	.....	.....	3.25	3.00	3.38	3.25	3.25	.....	1,350
Westingh E.&M	Pa.	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
do. pref	"	50	.....	.....	55.00	.....	.....	.....	.....	.....	55.00	.....	.....	.....	115
Wolverine	Mich.	25	6.50	.....	.....	.....	6.50	.....	.....	.....	6.88	6.75	7.00	6.88	1,652

* Official quotations Boston Stock Exchange. Total sales, 42,907.

INDUSTRIAL, COAL AND COAL RAILROAD.*

NAME OF COMPANY.	Par value.	Dec. 7. H.	Dec. 7. L.	Dec 9. H.	Dec 9. L.	Dec 10. H.	Dec 10. L.	Dec. 11. H.	Dec. 11. L.	Dec. 12. H.	Dec. 12. L.	Dec. 13. H.	Dec. 13. L.	Sales
Balt. & Ohio	100	51½	.....	51	.....	51½	51	51	50¾	50½	47	47½

DENVER, COLO.* Week ending Dec. 7.

NAME OF COMPANY.	Location.	Par value.	Opening	Highest.	Lowest.	Closing. Bid.	Closing. Ask.	Sales.
Addie C	Cripple Creek, Colo.	$1	.01¼	.01¼	.01¼	.01¼	.01¼	51,000
Agate	" " "	1	.01¼	.01¼	.01¼	.01¼	.01¾	290,500
Alamo	" " "	1	.10¾	.11	.09¼	.09¼	.10¾	70,200
Amity	" " "	1	.00¾	.005	.003	.003	.004	2,000
Anaconda	" " "	5	.75	.76	.69	.69	.70	32,600
Aola	" " "	1	.04¾	.04¾	.04¼	.04¼	.04½	251,000
Argentum-Juniata	Aspen, "	2	.48¾	.48¾	.43¾	.43¾	.44	500
Bangkok	Leadville, "	1	.08	.08¾	.08	.08	.08¾	7,000
Bankers	Cripple Creek, "	1	.20	.25	.20	.24	.25	70,500
Big Six	" " "	1	.06½	.06	.06	.06	.08	
Bob Lee	" " "	1	.02¾	.03½	.02½	.02¾	.03¼	83,200
Boston-Idaho	Leadville, "	1	.17	.17¾	.13½	.13½	.17¾	
Cannon ball	Cripple Creek, "	1	.01¾	.01¾	.01½	.01¾	.01¾	175,000
C. K. & N.	" " "	1	.01½	.01½	.01¼	.01¼	.01¾	112,500
Colo. City & Manitou	Leadville, "	1	.07¼	.07¼	.07¼	.07¼	.07¾	130,000
Creede & Cripple Creek	Cripple Creek, "	1	.08	.08	.07	.07	.07¾	26,000
Cripple Creek Con	" " "	1	.26	.30	.20	.20	.30	121,000
Eclipse	" " "	1	.01¾	.02¾	.01¾	.02½	.02¾	30,000
Eureka	" " "	1	.01¾	.02½	.01¾	.02	.02½	156,000
Fanny Rawlings	Leadville, "	1						
Forepaugh	Cripple Creek, "	1						
Franklin	" " "	1	.02½	.01	.02¾		.03	
Garfield Grouse	" " "	1	.06¾	.06¾	.06	.06	.06¾	247,100
Gold & Globe	" " "	1	.23	.26	.23	.23	.26	12,200
Gold Standard	" " "	1	.13	.14½	.11¾	.12¾	.13½	111,850
Henrietta	" " "	1	.01¾	.01¾	.01¾	.01¾	.01¾	365,500
Isabella	" " "	1	.49	.51¾	.48¾	.48¾	.49	15,600
Jack Pot	" " "	1	.12½	.14	.12	.12	.14½	12,500
Justice	" " "	1	.06¼	.06¾	.06¼	.06¼	.06½	5,500
Keystone	" " "	1	.09½	.1 ¾	.09	.09	.10¾	
Ladessa	" " "	1	.01¾	.02¾	.01¾	.02¼	.02¾	16,000
Mineral Rock	" " "	1				.15		
Mollie Gibson	Aspen, "	5	.40	.40	.35	.35		00
Mt. Rosa	Cripple Creek, "	1	.20	.21	.20			2,200
New Zealand	" " "	1	.12	.15½	.12	.14½	.15½	8,975
Nugget	" " "	1						
Oro Grande	" " "	1						
People's	" " "	1	.08			.11¾	.15	
Pharmacist	" " "	1	.10	.14¾	.10	.14½	.14¾	47,500
Portland	" " "	1	1.95	2.00¾	1.92	1.92		2,200
Reno	" " "	1	.07¾	.08	.07¼	.07¼	.07½	238 00
Sacramento	" " "	1	.08¾	.09	.08¾	.08¾	.09	84,000
Santa Fe	" " "	1	.01¾	.01¾	.01¾	.13¾	.01¾	42,000
Smuggler	Aspen, "	1						
Specimen	Cripple Creek, "	1						
Star of the West	" " "	1	.02	.02¾	.02	02	.02¾	74,000
Summit	" " "	1						
Tenderfoot	" " "	1	.02½	.03	.02½	.02¾	.03	4,000
Union Gold	" " "	1	.27¼	.35	.27¼			26,000
Union Lessing	" " "	1	.32	.35	.29	.29		100
Virginia M. Con	" " "	1	.03	.03¼	.03	.03	.03¼	12,500
Wheel of Fortune	" " "	1	.01	.01¼	.009	.01	.01	80,000
Work	" " "	1	.15	.16¾	.15	.15		2,000

*Official quotations Colorado Mining Stock Exchange. Total sales 3,106,525.

PHILADELPHIA, PA.*

NAME OF COMPANY.	L'cation.	Par Val'e	Dec. 5. H.	Dec. 5. L	Dec. 6. H.	Dec. 6. L.	Dec. 7. H.	Dec. 7. L.	Dec. 9. H.	Dec. 9. L.	Dec. 10. H.	Dec. 10. L.	Dec. 11. H.	Dec. 11. L.	Sales
Bethlehem Ir.	Pa.														
Bloom. C. & C.	"	50													
Cambria Iron.	"	50	48.75	47.88			50.00	48.50	14.88		49.00		49.00		472
" Receipts	"	50													
Cent. Coal & C.	"	100													
C., O. & Glf.Vt. Tst Ctfs.	I. T.	50	15.00	14.50			15.00		14 88		14.75		14.50		700
Fl. Top C.L.As.	W.V.	100													
" pref.		100													
Hunt & Br.Top.	Pa.	50			31										6
" pref.	"	50	53.38		53.50	53.38	53.50		53.50		53.50		53.50		120
Hutchinson C.	"														
" pref.	"														
Lehigh C. & N.	"	50	46.00	45 00	46.00	45.50	46.00	45.50	46.00	45.00	45.00	45.50	46 00	45.50	98
Lehigh Valley	"	50	40.38	39.88	40.25	40.00	40.00	39.88	40.00	3 .88	40.00	39.88	40.00	39.75	689
Little Sch'ykill	"	50													
Penn. Gas Coal	"	50													
Penna. R. R.	"	50	54 25	54.00	54 25	54.00	54.25	54.00	54.25	54.00	54.25	54.00	54.25	54.18	11,286
Penna. Salt	"	50													
Penna. Steel	"														
" pref	"														
Westmorel'd C	"	50					50.00								7
Wyo. Valley C.	"	100													

* Official quotations Philadelphia Stock Exchange. Total sales, 3,378.

SALT LAKE CITY, UTAH.* Week ending Dec. 7.

Name of Company.†	Par value.	Bid.	Asked.	Actual selling price.	Name of Company.†	Par value	Bid.	Asked.	Actual selling price.
Ajax	$10	$0.45	$0.50	$0.50	Daly West	20	$6.25	$6.75	$6.50
Alliance	1	1.50	1.45	1.40	Horn Silver	25	2.20	2.50	2.30
Amer. Nat. Gas	10	.12	.18	.15	Mammoth	25	1.15	1 30	1.25
Anchor	20	2 65	3.00	2.90	Mercur	25	6.75	7 00	7.00
Bogan	1	.15	.35	.25	Morgan	125	.50	.75	.60
Bullion Beck & C.	10	6.75	7.25	7.00	Ontario	100	9.00	10 00	9.25
Cane Springs	5		.75		Rover	10	1.15	1 25	1.25
Centen'l Eureka	50	57.50	60.00	60.00	Silver King	20	14.00	14.50	14.25
Cleveland Con	1				Sunshine	10	3.40	3.75	3.60
Comstock	25	.10	.25	.15	Tetro	1	.05	.25	.10
Dalton	5	.14	.18½	.17½	Utah	1	1.00	1.25	1.10
Daly	20	6.25	6.75	6.50	Utah Lime	10	3.50	4.00	4.00

* Special Report of James A. Pollock. † All the companies are located in Utah.

ASPEN, COLO.* Week ending Dec. 7

NAME OF COMPANY.	Location.	Par value.	Bid.	Asked	Sales.	Price
Alta Argent	Aspen, Colo.	$1.00	$0.07¼	$0.07¾	42,000	$0.07
Argentum-Juniata	" "	2 00	.43	.45½	13,000	.45
Aspen Contact	" "	5.00	.15	.18	500	.18
Aspen Deep Mining	" "	1.00	.07	.07¼	68,000	07
Best Friend	" "	1.00	.04	.04¼	2,000	.04
Bi-Metallic	" "	1.00	.01	.01¼	1,000	.01
Bishwhacker	" "	1.00	.04¼	.04¾	3,000	.04
Caverhill Consolidated	" "	1.00	.20	.20	24,000	.20
Della S	" "	5.00	.50	.55	2,000	.55
Gold Valley Placer	" "	1.00				
Mineral Farm Consolidated	" "	1.00	.05¼	06	8,000	.06
Mollie Gibson	" "	5.00	.38	.40	900	.40
Old Colony (Gold)	Taylor River, "	1.00	2.00	2.00	1,000	2.00
Sheep Mt. T. & M	Crystal, "	1.00				
Smuggler	Aspen, "	1.00	1.00	1.25		

* Special Report of Arkell, MacMillan & Stewart. Total sales, 166,800.

HELENA, MONT.* Week ending Dec. 7.

NAME OF COMPANY.	Location.	Company's office	Par value.	Bid.	Asked	Shares sold.	Price	Date.
Am. Dev. & M. Co.	Silv. Bow Co., Mont.	Butte, Mont.	$1	$1.50	$1.75	100	$1.65	Nov. 28
Bald Butte	L. & Cl'ke " "	Helena "	1	2 90	3.25			
Benton Group	Meagher " "	W. Sph. S. "	5	.5	25			
Combination	" "	" " "	10	.70	.75	200	.65	Nov. 26
Hel'a & Frisco.	Shoshone " Idaho	Helena, "	5	2.00	3.00			
Hel. & Livings'n	L. & Cl'ke " "			2.00	2.50			
Iron Mountain	Missoula " "	" "	10	.45	.50	1,000	.50	Nov 30
Merrill (Gold)	Jefferson " "	Butte "	1	.50	.60			
Ontario	DeerLodge " "	Helena "	1		1.00			
Yellowstone	Meagher " "	W. S. Sprge "	5	4.25	6.00	35,000	4.25	Nov.

* Special Report of Samuel K. Davis. Total sales, 36,300.

DULUTH, MINN.* Week ending Dec. 6.

NAME OF COMPANY.	Location.	Company's Office.	Par value.	Bid.	Ask.	Price.
Adams Iron	St. Louis Co., Minn	Duluth, Minn	$100	$5.00		
Biwabik Mt. Iron	" " "	" "	100	21.00	$22.50	
Lake Superior Con	" " "	" "	100	16.00	18 00	$16.50
Mesabi Chief	" " "	" "	100	1.75	2.00	
Minnesota Iron	" " "	New York City	100	70.00	72.50	
Mountain Iron	" " "	Duluth, Minn.	100	62.00	68.00	66.00

* Official quotations Duluth Board of Trade.

LONDON. Week ending Nov. 23.

NAME OF COMPANY.	Country	Product.	Capital stock.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
				£ s. d.	s.d.		£ s. d.	£ s. d.
Alaska-Mexican	Alaska	Gold	£160,000	1 0 0	0 7.2	Oct., 1895	1 7 7	1 12 6
Alaska Treadwell	"	"	1,000,000	5 0 0	1 6	" "	5 0 0	5 10 0
Alaska United	"	"					1 5 0	1 10 0
Banner	California	"					12 6	15 0
Cripple Creek Exp	Colorado	"	360,000	1 0			1 0 0	1 5 0
De Lamar	Idaho	Gold & silver	500,000	1 0 0	1 0	" "	17 6	1 0 0
Elkhorn	Montana	Silver	200,000	1 0 0	0 3	July "	2 6	3 0
Fraser River							2 0 0	2 2 6
Gilpin	Colorado	Gold					9 6	10 6
Harquahala	Arizona	Gold	300,000	1 0 0	0 6	Oct. 1894	5 6	6 6
Holcomb Valley	California	"	135,000	5 0			9	1 0
Jackson	"	"	161,159	5 0			1 3	1 6
Jay Hawk	Montana	"	285 000	1 0 0	0 6	Dec., 1892	1 0	1 6
Montana	"	Gold & silver	660,000	1 0 0	0 3	Oct., 1895	6 9	7 3
New Guston	Colorado	Silver	110,000	1 0 0	1 0	" 1892	10 0	12 6
Palmarejo	Mexico	Gold & silver	800,000	1 0 0			1 3	1 9
Plumas-Eureka	Colorado	Gold	281,250	2 0 0	0 9	Oct., 1895	8 9	11 3
Poorman	Idaho	Gold & silver	200,000	5 0			1 9	2 3
Richmond	Nevada	G'ld, sil. le'd	270,000	5 0 0	1 0	Nov., 1894	7 6	12 6
Sierra Buttes	California	Gold	245,000	2 0 0	0 6	Oct., 1895	8 9	11 3
Springdale	Colorado	"	240,000	4	0 2	Sept., 1894	1 3	1 6
Twin Lake	"	"	26,0 0	1 0 0	3 0	Feb., 1895	5 0	1 7 6
Colomb. Hydra'lic	Colombia	Gold	75,000	1 0 0	1 0	July, 1895	8 9	11 3
Frontino & Bolivia	"	"	140,000	1 0 0	0 6	Oct. "	1 2 6	1 5 0
Anaconda	Montana	Cop. & Sil.	6,000,000	5 0 0			5 10 0	6 10 0
Cape Copper pref.	So. Africa	Copper	600,000	2 0 0	1 3	June, "	2 3 9	2 6 3
			150,000	2 0 0	1 3	" "	2 0 0	2 5 0
Copiapo	Chile	"	200,000	2 0 0	1 6	May "	1 16 3	1 18 9
Rio Tinto	Spain	"	3,250,000	10 0 0	10 0	Nov. "	14 18 9	15 1 3
Tharsis	"	Sulpr & cop'r	1,250,000	2 0 0	4 0	April "	4 5 0	4 7 6
Bayley's Reward	W. Au't'lia	Gold	480,000	1 0 0	4 0	Dec., 1894	4 0	5 0
Broken Hill Prop'r.	N. S. Wales	Silver	384,000	8 0	2 0	Oct., 1895	2 6 3	2 8 9
Mt. Morgan Gold	Qu'ns'land	Gold	875.000	17 6	1 0	" "	2 18 9	3 1 3
British S. Africa Co	So. Africa	Lands & Ex.	2,000,000	1 0 0		July, 1895	4 13 9	4 16 3
City & Suburban	Transvaal	Gold	85,000	4 0 0	10 0	June, 1895	5 0 0	5 5 0
Crown Reef	"	"	120,000	1 0 0	5 0	July, "	10 12 6	10 15 0
De Beers Con	"	Diamonds	3,940,000	5 0 0	12 6	" "	24 7 6	24 12 6
Ferreira	"	"	90,000	1 0 0	13 0	" "	16 10 0	17 10 0
Geldenhuis Estate	"	"	200,000	1 0 0	6 0	" "	4 10 0	4 15 0
Jagersfontein	"	"	1,000,000	10 0 0	10 0	" 1894	7 17 6	8 2 6
Langlaagte Estate	"	Gold	470,000	1 0 0	5 0	" 1895	5 u 0	5 50
New Primrose	"	"	278,750	1 0 0	5 0	" "	6 0 0	6 2 6
Robinson	"	"	2 750.000	5 0 0	6 0	June "	9 0 0	9 10 0
Simmer & Jack	"	"	250,000	1 0 0	2 0	Aug. "	21 0 0	22 0 0

PARIS. Week ending Nov. 29.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Divs. last year.	Prices. Op'ning.	Prices. Closing
			Francs.	Fr.	Fr	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27,000,000	2,000	100.00	1,900.00	1,900.00
" " Firminy	"	"	3,000,000	500	85.00	1,625.00	1,627.50
" " Fives-Lille	"	"	12,000,000	500	35.00	645.00	650.00
" " la Marine	"	"	20,000,000	500	30.00	867 50	860.00
" " Longwy	"	"		500	35.00	600.00	602.50
" " l'Horme	"	"		500		22.00	20.00
Aguas Tenidas	Spain	Iron pyrites	10,000,000	500	40.00	181.00	186.00
Anzin	France	Coal			200.00	4,080.00	4,100.00
Boleo	Lower Cal.	Copper		500		1,165.00	1,166.00
Bruay	France	Coal	3,000,000	400	600.00	17,900.00	18,000.00
Callao	Venezuela	Gold	32,200,000	125		10 00	10.00
Cape Copper	S. Africa	Copper		50	1.50	53.75	55.62
Champ d'Or		Gold		25		70 00	61.25
Courrieres	France	Coal	6 0,000	300	150.00	686.25	625.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	580.00	552.50
Dombrowa	Russia	Coal		500		4,2 5.00	4,200.00
Dynamite Centrale	France	Explosives		500	25.00	625.00	596.00
Huanchaca	Bolivia	Silver		125	5.00	94.37	9 .00
Kebao	Tonquin	Coal		500		180.00	85.00
Langlaagte Estate	S. Africa	Gold	11,750,000	25	11.25	143.75	127.50
Laurium	Greece	Zinc & lead	16,300,000	500	40.00	595.00	595.00
Malfidano	Italy	Zinc	12,500,008	500	52.50	900.00	899.00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,300	500	37.50	365.00	355.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	740.00	739.00
Nickel	N. Caled'nia	Nickel	12,720,000	500	30.00	120.00	114.75
Penarroya	Spain	Coal, etc.		500	52.50	1,165.00	1,165.00
Rebecca	Colo'do, U.S.	Gold				25.00	24.00
Rio Tinto	Spain	Copper	81,250,000	250	8.00	410.00	382.50
Robinson	S. Africa	Gold		125	12.50	261.25	250.00
Saint Elie	Fr. Guiana	"	4,000,000	25		23.50	23.50
Salines de l'Est	France	Salt		500	27.00	260.00	300.00
Tharsis	Spain	Copper		50	6.25	119.00	119.00
Vielle Montagne	Belgium	Zinc	9,000,000	80	30.00	447.50	440.00

MEXICO. Week ending Dec. 5.

NAME OF COMPANY.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Prices. Closing.
Amistad y Concordia	Hidalgo	9,000	$0.77		$35	$36
Angustias	Guanajuato	2,400	25.00		1,250	1,080
Arevalo	Hidalgo		10.00		400	400
Asturiana y Anexas	Zacatecas	2,500	10.00		420	420
Bartolome de Medina	Hidalgo	2,000	3.00		305	300
Carmen		1,100	19.08		850	800
Castellana	Tepic	2,448	3 00		210	190
Cerro Colorado	Chihuahua	15,000		$1.00	16	15
Cinco Senores	Guanajuato	2,000	30.00		1,300	1,150
Concepcion y Anexas	S. Luis Potosi	2,700			250	280
El Oro	Guanajuato	500			105	100
Guadalupe	"	10,000	2.00		240	235
Luz de Maravillas	Hidalgo	1,100			350	380
Pabellon	"	1,000	21 89		210	200
Purisima de los Com.	Zacatecas	2,400			50	70
Real del Monte	Hidalgo	2,554	30.00		1,450	1,460
Rosario y Anexas	Durango	4,800			90	90
San Francisco	Hidalgo	2,000	6.00		505	500
S. Ped. Chalchihuites	"	1,000	2.00		200	200
San Rafael y An	"	1,200	36.00		1,9 0	1,950
do. free stock	"	1,200	16.00		880	850
Sta. Maria de la Paz	S. Luis Potosi	2,400			645	625
Soledad	Hidalgo	960	20.00		850	880
Sorpresa	"	960	5.00		610	450
Trinidad	Guanajuato	2,000	8.00		320	300
Tlauzingo	Puebla	2,400			40	30
Union	Hidalgo	2,000	7.00		620	630
Zaragoza	"	1,100			35	30
Zomelahuacan (gold)	Vera Cruz	5,000			105	100
Zona Min. de Pozos	Guanajuato	2,400		1.50	110	110

NOTE.—In most Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Prices are in Mexican dollars.

VALPARAISO, CHILE.* Week ending Oct. 26.

NAME OF COMPANY.	Capital.	Share value. N'minal.	Share value. Paid up.	Last dividend.	Prices. Bid.	Prices. Asked.	Prices. Last sale
Arturo Prat	$3,300,000	$100	$100	0½ per cent.	$42½	$43	$43
Caracoles	315,000	100	100	5 "		50	
Descub. de Huantajaya	1,000,000	100	100	2 "	25	35	25
Huanchaca de Bolivia	8,000,000	100	100	4 "	62	63½	64
Oruro	800,000	1,000	1,000		500	530	510
S. Agustin de Huantajaya	1,500,000	100	100	2½ per cent.	50	55	52½
Todos Santos	2,000,000	100	100	0½ "	28½	29½	29
Nitrate Cos:							
Agua Santa	5,000,000	500	500	6 "	160	163	163
Antofogasta	2,000,000	200	200	10 "	140	170	164
Union	3,000,000	200	100	3 "	75	77	76

* Special Report of Jackson Bros. Values are in Chilean pesos or dollars.

SHANGHAI, CHINA.* Oct. 25.

NAME OF COMPANY.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Date.	Last dividend. Amount.	Price.
Jelebu Mg. & Trad	China	45,000	$5	$5	Oct., 1894	$0.25	Taels 2.34
Punjom Mg. Co., Ltd.	"	58,850	4	3¾			" 4.38
do. pref	"	28,5 9	1	1			" 1.09
Raub A'lian G. Mg. Co.	"	200,000	£1	138 10d.	Dec., 1893	10½d.	" 2.92
Sheridan Con. Mg. Co.	Colorado, U.S	20,0 0	Taels 100	Taels 100			" 2.50

* Special Report of J. P. Bissett & Co. The prices quoted are in Shanghai taels.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par val	Assessments Total Levied	Assessments Date and amount of last.			Dividends. Total paid.	Dividends. Date & amount of last.		
1	Adams, s. L.	Colo.	$1,500,00	150,000	$10	*	.....	.....	.....	$693 500	Oct..	'85	04
2	Alaska-Treadwell, g..	Alaska	5,000,00	200,000	25	.....	.....	.....	.....	2,224,000	Apr..	1895	.37½
3	Alice, s.	Mont.	10,000,00	400,000	25	*	.....	.....	.....	975,000	Nov.	891	.06¼
4	Amador, c.	Cal.	1,250,00	250,000	5	*	.....	.....	.....	31,250	Aug..	890	.12½
5	American, c	Colo..	5,000,00	500 000	10	*	.....	.....	.....	225,000	Mar..	1892	.05
6	American Belle, s. & C	Colo.	2,000,00	4 0,000	5	*	.....	.....	.....	50,000	Apr..	1891	12½
7	American Nettie, s. &	Colo.		900,000		.....	.....	.....	.....	75,000	Mar..	1892	.02
8	Argentum-Juniata..	Colo..	800,000	1,800,000	2	.....	.....	.....	.....	156,000	Oct ..	1895	.03
9	Atlantic, c	Mich.	1,000,00	40,000	25	280,000	April	1875	$1.00	50,000	Feb..	1891	1.00
10	Argyle, g.	Colo..	1,000,000	1,000,000	1	*	.....	..	..	20,000	Mar.	1892	.01
11	Aspen Mg. & S., s. L.	Colo.	2,000,00	200,000	10	*	.....	.....	.....	900,000	July.	1894	.10
12	Aurora, t.	Mich..	2,500,00	100,000	25	.....	.....	.....	.....	650,000	Feb..	1893	2.00
13	Badger, s	Ont..	250,00	50,000	5	.....	.....	.....	.....	97,500	Mar.	1890	.25
14	Bald Butte	Mont	250,00	250,000	1	*	.....	.....	.....	382,000	Jan.	1895	.05
15	Bangkok-C Bell, c.s.L.	Colo..	600,00	600,000	1	.....	.....	.....	.....	101,510	Nov.	1895	.00½
16	Bates Hunter, s. & ..	Colo.	1,000,00	1,000,000	1	.....	.....	.....	.....	67,500	Dec..	1891	.00½
17	Belden, F. E., m.	N. H.	500,00	100,000	5	*	.....	.....	.....	163,113	Nov..	1895	.04
18	Belle Isle, s.	Nev.	10,000,00	100,000	100	280,271	Sept	1893	.10	800,000	Dec..	1879	.25
19	Belcher, s. &	Nev.	10,400,00	104,000	100	3,262,900	Nov.	1893	.20	15,397,200	Apr..	1876	1.00
20	Bellevue, Idaho, s. L	Idaho	1,250,00	125,000	10	120,000	Dec..	1889	.25	200,000	Jan..	1890	.10
21	Best Friend	Colo.	1,000,00	1,000,000	1	*	.....	.....	.....	90,000	Feb..	1892	.01
22	Bi-Metallic, s. &	Mont.	5,000,00	200,000	25	.....	.....	.....	.....	1,630,000	June	1893	.10
23	Bodie Con., G. L	Cal..	10,000,00	100,000	100	714,990	July	1893	.15	1,677,372	Dec..	1894	.25
24	Boston & Mont., G.	Mont.	2,500,00	250,000	10	*	.....	.....	.....	520,000	June	1886	.15
25	Boston & Mont., C. &	Mont	3,750,00	150,000	25	*	.....	.....	.....	3,075,000	Nov..	1895	5 00
26	Brotherton, L.	Mich	2,000,00	80,000	25	*	.....	.....	.....	120,000	Mar..	1893	.50
27	Bulwer, G.	Cal..	10,000,00	100,000	10	155,000	July	1893	.15	190,000	Oct..	1892	.05¼
28	Bunker Hill & S. s.L.	Idaho	2,000,00	200,000	10	*	.....	.....	.....	150,000	Oct..	1888	.06
29	Caledonia, G.	Dak..	10,000,00	100,000	100	505,000	May	1885	.15	92,000	Oct..	1890	.06¼
30	Calumet & Hecla c.,	Mich.	4,500,00	100,000	25	1,300,000	.....	.....	.....	44,350,000	Dec..	1895	5.00
31	Centen'l-Eureka, s.L.	Utah	1,500,00	30,000	50	30,000	Mar.	1888	1.00	1,410,000	Nov..	1895	1 00
32	Central, C.	Mich.	500,00	20,000	25	100,000	Oct..	1861	.65	1,970,000	Feb..	1891	1 00
33	Champion, G	Cali	340,000	34,000	10	150,000	.....	.....	.....	216,000	Aug..	1895	.10
34	Chrysolite, s. L.	Colo..	10,000,00	200,000	50	*	.....	.....	.....	1,850,000	Dec..	1884	.25
35	Cœur D'Alene, s. L.	Idaho	5,000,000	500,000	10	.....	.....	.....	.....	340,000	June	1893	.06
36	Colorado Central, s.L.	Colo..	2,700,00	275,000	10	*	.....	.....	.....	802,661	Apr..	1893	.05
37	Commonwealth, s..	Nev..	10,000,000	100,000	100	200,000	Nov.	1893	.10	30,000	Nov..	1890	.20
38	Confidence, s. L	Nev...	2,496,00	24,960	100	1,589,550	Aug..	1892	.50	277,680	Apr..	1889	1.00
39	Cons. Cal. & Va., s.G	Nev...	21,600,00	216,000	100	216,000	Dec..	1892	.50	3,952 800	Mar	1895	.25
40	Contention, s.	Arts.	12,500,00	250,000	50	.....	.....	.....	.....	2,637,500	Aug.	1892	.20
41	Cook's Peak, s.	N. M..	2,000,00	200,000	10	.....	.....	.....	.....	119,532	Nov	1892	.05
42	Cop. Queen Con., C.	Arts.	2,000,00	200,000	10	.....	.....	.....	.....	1 910,000	June.	1895	.25
43	Coptis	Nev.	10,000,00	100,000	100	.....	.....	.....	.....	68,000	Feb..	1895	.01
44	Cortes, s.	Nev.	1,500,00	300,000	5	*	.....	.....	.....	735,000	Feb..	1893	.15
45	Crescent, s. L. G.	Utah.	15,000,00	600,000	25	60,000	Oct	992	.10	288,000	Oct..	1888	.03
46	Crown Point, G. s.	Nev...	10,000,00	100,000	100	2,750,000	June	1893	.25	11,898,000	Jan..	1875	.00
47	Daly, s. L.	Utah.	3,000,00	150,000	20	.....	.....	.....	.....	2,850,000	May..	1893	.25
48	†Deadwood-Terra, G.	Dak..	5,000,00	200,000	25	*	.....	.....	.....	1,140,000	Sept..	1892	.05
49	DeLamar, G s	Idaho	2,000,00	400,000	5	.....	.....	.....	.....	1,722 000	Oct..	1895	.24
50	Derbec B. Grav., G.	al..	10,000,00	100,000	100	100,000	Sept.	1892	.10	260,000	Mar	1891	.05
51	Dexter, g. s	Nev.	1,000,00	100,000	10	.....	.....	.....	.....	245,000	July	1893	.25
52	Elkhorn, s.	Mont.	1,000,00	200,000	5	*	.....	.....	.....	1,324,689	May	1895	.12½
53	Elkton	Colo..	500,00	500,000	1	.....	.....	.....	.....	60,000	Dec.	1894	.01
54	Enterprise, s	Colo..	2,500,00	500,000	5	*	.....	.....	.....	850,000	June.	1893	.25
55	Eureka Con., s. W. G.	Nev.	1,000,00	80,000	25	550,000	June	1889	.50	5,112,500	Jan..	1892	.25
56	Eureka Hill, G. S. L.	Utah.	1,000,00	10,000	10	*	.....	.....	.....	1,500,00	Jan..	1891	.04
57	Evening Star, s. L.	Colo.	500,00	50,000	10	.....	.....	.....	.....	1,437,500	Dec.	1889	.25
58	Father de Smet, G.	Dak..	10,000,00	100,000	100	300,000	Nov.	1878	.00	1,125,000	Dec..	1885	.20
59	Franklin, C.	Mich..	1,000,00	40,000	25	330,000	June	1867	2.50	1,240,000	Jan..	1894	2.00
60	Glengarry	Mont.	1,000,00	100,000	10	.....	.....	.....	.....	10,000	June.	1891	10
61	Gold & Globe, G.	Colo..	750,00	750,000	1	.....	.....	.....	.....	9,375	Mar..	1895	.00¼
62	Gould & Curry, s. G.	Nev...	10,800,000	108,000	100	4,698,400	Oct	1893	.10	3,826,800	Oct..	1870	10.00
63	Grand Prize, s.	Nev...	10,000,000	100,000	100	785,000	Jan..	1890	.30	495,000	Mar	1884	.25
64	Granite Mountain, s.	Mont.	15,000,000	400,000	25	.....	.....	.....	.....	12,120,000	July.	1892	.20
65	Great Western, L. Q..	Cal...	5,000,000	50,000	100	50,526	.....	1889	.15	368,366	Nov	1893	.25
66	Hale & Norcross, G. S.	Nev...	11,200,000	112,000	100	5,646,900	June	1887	.50	1,822,000	Aug	1888	.50
67	Hecla Con., s. G. L. C.	Mont.	1,500,00	30,000	50	.....	.....	.....	.....	2,115,000	Aug..	1895	.50
68	Hel's Mg. & Red, s.L.G.	Mont.	3,315,000	663,000	5	*	.....	.....	.....	197,970	July.	1886	.06
69	Helena & Frisco, s.L.	Idaho	2,500,000	500,000	5	.....	.....	.....	.....	250,000	Feb..	1892	.02
70	Helena & Victor	Mont.	1,000,000	200,000	5	.....	.....	.....	.....	80,000	May	1892	.05
71	¶Holmes, s.	Nev...	10,000,000	100,000	100	345,000	Mar.	1890	.25	75,000	Apr.	1892	.25
72	Homestake, G.	Dak..	12,500,000	125,000	100	200,000	July.	1878	1.00	5,618,750	Oct..	1895	.25
73	Hope, s.	Mont.	1,000,000	100,000	10	*	.....	.....	.....	552,250	Jan..	1895	.10
74	Horn-Silver, s. L.	Utah.	10,000,000	400 000	25	*	.....	.....	.....	5,137,500	Apr..	1895	.12½
75	Idaho, G.	Cal..	310,000	3,100	100	.....	.....	.....	.....	5,489,000	Sept.	1893	2.50
76	Illinois, s.	N. M..	100,000	100,000	1	*	.....	.....	.....	45,000	Apr..	1889	.20
77	Iron Mountain, s.	Mont.	5,000,000	500,000	10	*	.....	.....	.....	395,000	Nov..	1895	.02
78	Iron-Silver, s. L.	Colo..	10,000,000	500,000	20	*	.....	.....	.....	2,500,000	Apr..	1889	.20
79	Jackson, G. S.	Nev..	5,000,000	50,000	100	247,500	Mar..	1893	.20	80,000	Feb.	1895	.04
80	Kearsarge, C.	Mich..	000,000	40,000	25	190.000	Oct..	1887	1.00	120,000	Dec..	1895	1.00
81	Kennedy	Cal..	10,000,000	100,000	100	.....	.....	.....	.....	2,734,000	Aug..	1895	.48
82	Lake Superior, L.	Mich..	2,100,000	84,000		.....	.....	.....	.....	.....	.....	.....	.....
83	Leadville Con., s. L.	Colo..	4,000,00	400,000	10	*	.....	.....	.....	316,000	Feb..	1893	.05
84	Lexington, G. S.	Mont.	4,000,00	40,000	100	*	.....	.....	.....	852,200	July.	1893	.90
85	Little Chief, s. L.	Colo..	10,000,000	200,000	50	*	.....	.....	.....	820,000	Dec..	1890	.05
86	Maid of Erin	Colo..	3,000,000	600,000	5	.....	.....	.....	.....	708,500	Apr..	1893	.25
87	Mammoth, s. L. G.	Utah	10,000,000	400,000	250	110,000	.....	1882	.25	1,040,000	Dec..	1891	.10
88	Maxfield	Utah.	5,000,000	200,000	10	.....	.....	.....	.....	117,000	Apr..	1892	.03
89	Mayflower, D. gravel	Cal...	1,200,000	60,000	20	.....	.....	.....	.....	242,000	Aug..	1895	.10
90	Minas Prietas, G. S.	Mex..	1,000,000	100,000	10	*	.....	.....	.....	350,000	Dec..	1890	.50
91	Minnesota, C.	Mich..	1,000,000	40,000	25	420,000	April	1886	1.00	1,820,000	Mar..	1878	.....
92	Minnesota Iron, I.	Minn.	16,500,000	165,000	100	.....	.....	.....	.....	2,745,000	Apr..	1893	1 50
93	Mollie Gibson, s.	Colo..	5 000,000	1,000,000	5	19 500	Jan..	1891	.01	4,080,000	Jan..	1895	.05
94	Monitor, G.	S. Dak	2,500,000	250,000	10	.....	.....	.....	.....	45,000	Oct..	1890	.03
95	Mono, G.	Cal..	5,000,000	50,000	100	797,500	Feb..	1893	.25	12,500	Mar	1886	.25
96	Montana, Lt., G. S.	Mont.	3,300,00	660,000	5	*	.....	.....	.....	2,701,575	Jan.	1895	12½
97	Moose	Colo..	600,000	600,000	1	.....	.....	.....	.....	72,000	Nov..	1894	.02
98	Morning Star, s. L.	Colo..	1,000,000	100,000	10	.....	.....	.....	.....	1,025,000	Dec..	1891	.25
99	Morning Star Drift, G	Cal..	240,000	2,400	100	.....	.....	.....	.....	446,300	Oct..	1895	7.00
100	Mouiton, s. G.	Mont.	2,000,00	400,000	5	*	.....	.....	.....	460,000	July.	1894	.05
101	Mt. Diablo, s.	Nev..	5,000,000	50,000	100	137,500	June	1880	2.00	225,000	Nov	1893	.50
102	Mt. Rosa, G	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	10,000	Jan..	1895	.10
103	Napa, Q.	Cal..	700,000	100,000	7	.....	.....	.....	.....	740,000	Oct..	1895	.20
104	Navajo, G. S.	Nev..	10,000,000	100,000	100	538,714	Sept.	1893	.10	226,111	Apr..	1889	.10
105	New Guston, s.	Colo..	550,000	110,000	5	.....	.....	.....	.....	1,877.500	Apr..	1892	.75
106	North Banner Con.	Cal...	1,000,000	100,000	10	.....	.....	.....	.....	20,000	July..	1891	.05
107	North Commonw'th	Nev..	10,000,000	100,000	10	90,000	Jan..	1893	.10	25,000	June	1891	.25
108	N. Hoover Hill, G. S.	N. C	300,00	120,000	2½	*	.....	.....	.....	30,000	Dec.	1895	.06¼
109	North Belle Isle, s.	Nev..	10,000,000	100,000	100	513,075	April	1893	.10	230,000	May	1893	.50
110	North Star, G.	Cal..	1,000,000	100,000	10	20,000	.....	1885	.02	450 000	June	1893	.50
111	Nugget, G.		1,000,000	1,000,000	1	*	.....	.....	.....	10,000	Jan..	1895	.00½
112	Omaha Cons., G.	Cal...	2,400,000	24,000	100	.....	.....	.....	.....	97,200	July..	1894	.15
113	Ontario, s. L.	Utah	15,000,000	150,000	100	.....	.....	.....	.....	13,175,000	Oct..	1892	.50
114	Ophir, G. S.	Nev..	10,000,000	100,000	100	4,391,040	July	1893	.25	1,595,800	Jan	1880	1.00
115	Osceola, C.	Mich..	1,250,000	50,000	25	480,000	April	1876	1.60	1,947,500	June	1895	1.00
116	Pacific Coast, B.	Cal...	2,000,000	20,000	100	.....	.....	.....	.....	422,500	July.	1893	1.00
117	Parrot, C.	Mont.	2,300,000	233,000	10	.....	.....	.....	.....	1,569,000	June	1893	.10
118	Petro	Utah.	10,000,000	10,025	100	.....	.....	.....	.....	17,500	July..	1891	.75
119	Pharmacist, G.	Cal...	1,200,000	1,200,000	1	.....	.....	.....	.....	8,000	June.	1893	.01
120	Plumas Eureka, G.	Colo.	1 406,250	140,600	50	.....	.....	.....	.....	2,696,295	Oct..	1893	.18
121	Plymouth Con., G.	Cal..	5,000,000	100,000	50	*	.....	.....	.....	2,280,000	Feb.	1888	.40
122	Poorman; G. S.	Idaho	375,000	900,000	1 25	*	.....	.....	.....	68,260	Sept.	1892	.15
123	Portland, G.	Colo..	3,000,000	3,000,000	1	*	.....	.....	.....	868 500	Nov..	1895	.02
124	Quicksilver, pref., Q.	Cal...	4,300,000	43,000	0	.....	.....	.....	.....	1,823,911	June	1891	1.25
125	" com., Q	Cal...	5,700,000	57,000	100	.....	.....	.....	.....	843,867	July.	1892	.40
126	Quincy, C.	Mich..	1,250,000	50,000	105	200,000	Dec..	1862	.....	7,693,000	Aug..	1895	4.00
127	Red Cloud	Idaho	1,000,000	200,000	25	.....	.....	.....	.....	153,000	Dec..	1892	.10
128	Retriever, L.	S. Dak	1,250,000	250,000	5	.....	.....	.....	.....	20,000	Aug..	1891	.08
129	Rialto, G.	Colo..	300,000	300,000	1	*	.....	.....	.....	50,250	Apr..	1892	.01½
130	Richmond, s. L.	Nev..	1,350,000	54,000	5	*	.....	.....	.....	4.386,780	Sept.	1893	.25
131	Rico-Aspen	Colo..	5,000,000	1,100,000	25	.....	.....	.....	.....	325,000	Nov..	1894	.02½
132	Ridge, C.	Mich..	1,250,000	50,000	5	219,939	Mar	1886	50	99,785	Feb..	1880	.50
133	Robinson Con., s. L	Colo..	10,000,000	200,000	20	*	.....	.....	.....	885,000	Mar	1896	.05
134	Savage, s.	Nev...	11,200,000	112,000	50	6,966,000	June	1893	.25	4,460,000	June	1869	3.00
135	Sierra Butte, G.	Cal...	2,225,000	122,500	10	.....	.....	.....	.....	1,559,933	Oct..	1871	.12½
136	Sierra Nevada, s. G.	Nev..	10,000,000	100,000	10	6,521,910	Aug.	1893	.20	102,000	Jan..	1891	1.00
137	Silver Cord, s. L. G.	Colo..	5,000,000	500,000	100	.....	.....	.....	.....	270,000	Apr..	1889	.10
138	Silver King, s.	Utah.	10,000,000	100,000	10	97,479	Aug.	1892	.25	1,380,000	N ..	1895	.25
139	Silver Mg. of L. V., s.L.	N. M..	500,000	500,000	1	*	.....	.....	.....	300,000	Dec..	1891	4.05
140	Small Hopes Con., s.	Colo..	5,000,000	250,000	6	*	.....	.....	.....	3,225,000	Oct..	1895	.10
141	Standard, G. S.	Cal...	10,000,000	100,000	20	100.000	June	1890	.50	3,771,159	June.	1895	.10
142	Swansea, G. S.	Colo..	600,000	60,000	10	.....	.....	.....	.....	39,000	Sept.	1892	.10
143	Tamarack, C.	Mich..	1,250,000	50,000	15	520,000	April	1885	3.00	4,670,000	Dec..	1895	4.00
144	Trinity River Hydr., G	Colo..	500,000	500,000	21	*	.....	.....	.....	37,500	Apr..	1894	.00½
145	Union	Colo..	1,250,000	1,250,000	1	.....	.....	.....	.....	27,740	May..	1895	.01
146	United Verde, C.	Ariz..	3,000,000	300,000	0	.....	.....	.....	.....	562,500	Dec .	1893	.25
147	Victor, G	Colo	1,000,000	200,000	15	.....	.....	.....	.....	455,000	Dec..	1895	.10
148	Victor L. & M. Co., G.	Colo..	600,000	600,00	1	.....	.....	.....	.....	6,000	June.	1895	.05
69	Ward Con., s.	Colo	2,000,000	200,000	1	.....	.....	.....	.....	20,000	Dec..	1889	05
50	W. Y. O. D.	Cal	60,000	30,000	2	22,500	May..	1891	.10	106,000	Aug..	1895	.10
1	Yankee Girl	Colo	1,800,000	240,000	5	.....	.....	.....	.....	520,000	July	1891	.25
	Yellow Jacket, G.		12,000,000	120,000	100	.....	July.	1893	.25	2,184,000	Aug..	1871	1.50

NON-DIVIDEND-PAYING MINES

	Name and Location of Company.		Capital Stock.	Shares. No.	Par	Assessments. Total levied.	Assessments. Date and amount of last.		
1	Ajax, G. S. L.	Utah.	$3,000,000	300,000	$10	$15,000	Mar.	1895	$2
2	Alliance, s. G.	Utah.	100,000	100,000	1	120,000	Feb..	189	.10
3	Allouez, C.	Mich.	2,000,000	80,000	25	1,424,937	Oct..	1891	.10
4	Alpha Con., G. S.	Nev..	3,000,000	30,000	100	269,000	Sept.	189	....
5	Alta, s.	Nev..	10,080,000	100,800	100	3,369,880	Jan.	1892	.05
6	American Flag, s.	Colo..	1,250,000	125,000	10	300,000	June	1887	....
7	Anchor, s. L. G.	Utah.	3,000,000	150,000	5	560,000	July.	1892	5
8	Barcelona, G.	Nev..	5,000,000	200,000	5	*	.....	.....	.....
9	Belmont, G.	Cal...	500,000	500,000	100	*	.....	.....	.....
10	Belmont, S.	Nev..	5,000,000	50,000	100	735,000	April	1888	....
11	Best & Belcher, s. G.	Nev..	10,080,000	100,800	10	2,405,275	Aug..	189	.2
12	Black Oak, G.	Cal...	3,000,000	300,000	10	*	.....	.....	.....
13	Brownlow, G.	Colo..	250,000	250,000	5	.....	.....	.....	.....
14	Brunswick, G.	Cal..	2,000,000	400,000	5	.....	.....	.....	.....
15	Bullion, s. G.	Nev.	10,000,000	100,000	100	2,890,000	Aug.	189	.2
16	Butte & Boston, C. S.	Mont.	5,000,000	200,000	10	.....	.....	.....	.....
17	Butte Queen, G	Cal..	1,000,000	100,000	10	6,000	Jan..	1892	....
18	Calaveras, G.	Cal..	500,000	500,000	5	.....	.....	.....	.....
19	Calaveras Con., G.	Cal..	800,000	160,000	10	.....	.....	.....	.....
20	California, G.	Cal..	1,000,000	100,000	5	9,000	Mar..	1892	....
21	California Con. L. Q.	Cal..	2,250,000	450,000	10	.....	.....	.....	.....
22	Challenge Con., G. S.	Nev..	5,000,000	50,000	10	.....	.....	.....	.....
23	Chollar, S. G.	Nev.	11,200,000	112,000		2,212 000	May..	1895	.5
24	Colchis, S. G.	N. M..	500,000	150,000	5	.....	.....	.....	.....
25	Colorado, S.	Colo..	1,625,000	325,000	1	.....	.....	.....	.....
26	Comstock, S.	Utah.	1,250,000	250,000	100	.....	.....	.....	.....
27	Comstock Tun.	Nev.	10,000,000	100,000	100	35,000	Mar.	1887	.10
28	Con. Imperial, G. S	Nev.	5,000,000	50,000	50	2,062,500	Jan..	1892	.25
29	Con. New York, S. G.	Nev..	5,000,000	100,000	100	110,000	Mar..	1892	.10
30	Con. Pacific, G.	Cal.	6,000,000	60,000	10	198,000	June	1890	.10
31	Crescent, S. L.	Colo.	3,000,000	300,000	100	*	.....	.....	.....
32	Crocker, S.	Ariz.	10,000,000	100,000	100	165,000	Aug.	1892	.05
33	Crowell, G.	N. C..	500,000	500,000	1	.....	.....	.....	.....
34	Dahlonega, G	Ga..	250,000	250,000	10	.....	.....	.....	.....
35	Decatur, S	Colo..	1,500,000	300,000		.....	.....	.....	.....
36	Denver City S.	Colo.	5,000,000	500,000	11	*	.....	.....	.....
37	Denver Gold, G.	Colo..	300,000	60,000	5	.....	.....	.....	.....
38	Dickens-Custer, S.	Idaho	4,100,000	420,000	5	.....	.....	.....	.....
39	Durango, G.	Colo..	500,000	500,000	1	*	.....	.....	.....
40	El Dorado, S.	Cal..	1,000,000	250,000	4	*	.....	.....	.....
41	Emma, S	Utah.	625,000	500,000	125	.....	.....	.....	.....
42	Emmons, S. L.	Colo.	2,000,000	2 000,000	1	.....	.....	.....	.....
43	Empire, S.	Utah.	10,000,000	100,000	100	.....	.....	.....	.....
44	Eureka Tunnel, S. L.	Nev..	10,000,000	100,000	100	.....	.....	.....	.....
45	Exchequer, S. G.	Nev..	10,000,000	100,000	100	940,000	Jan..	1892	.25
46	Found Treasure, G. S.	Nev..	10,000,000	100,000	100	130,500	Jan..	1892	.50
47	Gogebic I. Syn., I.	Wis..	5,000,000	200,000	25	.....	.....	.....	.....
48	Gold Cup, S.	Colo..	500,000	500,000	1	*	.....	.....	.....
49	Golden Era, S.	Mont.	1,000,000	200,000	10	*	.....	.....	.....
50	Gold Flat, G.	Cal .	1,000,000	100,000	10	5,000	Mar..	1892	.05
51	Gold Rock, G.	Cal. .	1,000,000	500,000	2	.....	.....	.....	.....
52	Golden FeatherCh., S	Cal..	900,000	180,000	5	.....	.....	.....	.....
53	Goodyear G. S. L.	Mont.	1,000,000	200,000	5	13,000	Feb..	1892	.01
54	Grand Duke, S.	Colo.	900,000	90,000	10	.....	.....	.....	.....
55	Gregory Con., G.	Mont.	3,000,000	300,000	10	.....	.....	.....	.....
56	Harlem M. & M. Co., G.	Cal.	1,000,000	200,000	5	.....	.....	.....	.....
57	Hartery Con., G.	Cal..	1,000,000	100,000	10	.....	.....	.....	.....
58	Hartshorn, G. S. L.	S. Dak	1,250,000	250,000	5	22,000	Oct..	1890	.05
59	Head Cent. & Tr., S. G	Ariz.	10,000,000	100,000	100	6 750	Sept.	1891	.00¼
60	Hector, G.	Cal..	1,500,000	300,000	5	15,981	Mar..	1892	.03
61	Himalaya, G. S. L.	Utah.	1,800,000	80,000	10	45,000	Jan..	1889	.15
62	Holywood	Cal..	200,000	100,000	2	12,800	Oct..	1892	.00¼
63	Huron, C.	Mich..	1,000,000	40,000	25	.....	.....	.....	.....
64	Idaho, G. S	Idaho	250,000	250,000	5	280,000	May	1887	3.00
65	Ingalls, G	Colo..	100,000	20,000	5	.....	.....	.....	.....
66	Ironton, I.	Wis..	1,000,000	40,000	25	.....	.....	.....	.....
67	Iroquois, C.	Mich..	1,250,000	50.000	25	.....	.....	.....	.....
68	Kentuck Con.	Nev..	10,500,000	105,000	00	57,750	July	1892	.10
69	Julia Con., G. S.	Nev..	11,000,000	110,000	100	1,463,000	Jan..	1889	.10
70	Justice, G. S. C.	Colo.	500,000	500,000	1	*	.....	.....	.....
71	Lacrosse, G.	Colo..	1,000,000	100,000	10	*	.....	.....	.....
72	Little Jos